THE VETERINARY JOURNAL
AND
Annals of Comparative Pathology.

MARCH, 1885.

THE TREATMENT OF COLIC WITH PHYSOSTIGMINUM.

BY PROFESSOR W. F. GARSIDE, ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

IN the VETERINARY JOURNAL of November, 1882, I brought under the notice of English veterinarians an account by Professor Dieckeroff, of the action and uses of this drug (the alkaloid of Calabar bean, also known as Eseria). I am pleased to find that it can now be obtained from some of our wholesale druggists, and that it is also being used in the practice of some of my professional brethren. Mr. Nettleton's interesting article in the VETERINARY JOURNAL, January, 1885, is, I think, instructive on several points. One lesson, I think, ought to be gathered from its perusal, viz., to avoid being too hasty in coming to a conclusion regarding the merits or demerits of a new therapeutical agent. His first cases were not by any means calculated to impress him favourably with regard to the drug now under consideration. Indeed, I rather suspect that Mr. Nettleton was somewhat disappointed, as he does not appear to have used physostigminum in his subsequent cases (with the exception of case No. 4) until other medicines had failed—in fact, its use looks very much like a *dernier ressort*. The success which attended his latter cases clearly justifies Mr. Nettleton, I think, in saying that physostigma deserves "a place as a valuable remedy in veterinary practice."

Professor Siedamgrotzky, of the Dresden Veterinary College, has just published in the *Sächs. Veterinarber* (28 Jahrgang) a valuable contribution regarding the action of this drug. In the hope of helping those veterinarians who still hesitate about using physostigminum to come to a decision, I offer a translation of Professor Siedamgrotzky's instructive article :—

"During the last twelve months 97 patients were admitted into the Dresden College Hospital suffering from Colic, of which 17 died. Eseria (physostigminum sulphate), which has been so strongly recommended by Dieckeroff, was administered at once in 53 cases. Every case of Colic was not treated with eseria, but other remedies, such as morphia injections in slight cases of Spasmodic Colic, aloes in Impaction, etc., were tried; whilst in severe and hopeless cases, in which one had reason to suspect displacements of the intestines, such as Volvulus, etc., eseria was only occasionally given. The results of the treatment are given in the following lines, in which the diseases, as far as a knowledge of the history of the case and symptoms presented would allow us to judge of them, are grouped into the various recognised forms of Colic :—

"1. *Spasmodic Colic.*—Six cases.—Fæcal evacuations took place in from 10-12 minutes, in one case, however, in half an hour, after the injection of 0·04 gramme (in one case 0·05 gramme) of eseria. Recovery occurred in every case within half an hour.

"*Colic from Overfeeding.*—Recovery followed in two cases in an hour after administration of 0·05 gramme and 0·08 gramme respectively, and fæces were passed in two hours. In a third case, which was apparently a hopeless one, no action resulted from 0·04 gr. of eseria. Death occurred in half an hour. *Post-mortem* examination revealed rupture of the stomach.

"3. *Impaction Colic.*—Eight cases.—Passage of fæces took place in six cases in 15-45 minutes after the administration of eseria. Doses—in one case 0·03 gr., in five 0·05 gr., in two 0·08 gr. In two of the cases no action of the bowels resulted, notwithstanding that the dose was 0·08 gr. Recovery took place in two cases, but in the remaining ones it was necessary to

administer, about two hours afterwards, laxative medicine (extract of aloes, etc). Recovery followed in 2-6 hours.

"4. *Flatulent Colic.*—Six cases.—Eseria, in 0·05 gramme doses. In every case, in 7-15 minutes, a large quantity of gases made their escape, recovery being complete in 30 minutes.

"5. *Constipation Colic.*—Thirty cases.—Recovery took place in twelve very severe cases after the use of eseria alone (one case 0·4, two cases 0·08, eight cases 0·05, and in one case 0·03 and 0·05 gramme); the intestinal murmurs were audible in 15-4 minutes, fæcal evacuations occurred in ½-2 hours, recovery taking place soon after. In eleven cases the injection of 0·05 gramme of eseria produced no effect, or at most only a transient one; laxative medicine was, therefore, prescribed after an interval of two hours, the result being recovery in 4-8 hours.

"Twenty-eight of the patients suffering from Colic recovered in, comparatively speaking, a very short time, after the use of eseria alone. In twenty-four cases its action was insufficient, and was supplemented by the use of laxative medicine. Nevertheless, we have every reason to be highly satisfied with the results. Eseria is particularly applicable in cases of Spasmodic and Flatulent Colic, and also in Colic arising from overfeeding. It is more convenient, and acts more rapidly, than any other remedy.

"It should, however, be mentioned that the powerful intestinal movements which eseria calls forth are not always of themselves sufficient to break down and remove the hard impacted masses which are often present. In such cases, especially in those accompanied by obstinate constipation, we cannot afford to dispense with other laxative agents, such as aloes extract, Glauber's salts, etc."

It is to be hoped that other practitioners who have used, or may in future use, physostigminum will follow Mr. Nettleton's example, and furnish us with the results. Might I suggest its use in some of the obstinate cases of Constipation and Impaction of the stomach in ruminants. It might also prove beneficial in Tympanites in these animals; anyhow, it is worthy of a trial.

RUPTURE OF THE RECTUM.

BY A. SPREULL, F.R.C.V.S., DUNDEE.

THE subject of this rather unusual lesion was an eight-year-old chestnut-coloured, heavy lorry horse, the property of a firm of contractors here.

Up to the morning of the 26th of January he had been in perfect health, so far as could be seen, and even on that day he did his work as usual. He also ate all his food during the day, though he took rather longer to consume his allowance, and with the exception of his supper, which was not quite eaten out, he may be said to have taken his food as usual. It was remarked by his driver during the day that he made frequent attempts to micturate, and on this account he complained at night that he thought "all was not so right as it ought to be with him." No particular notice was taken of this statement, as he seemed to be all right again, and had begun to eat as usual after the day's work was over.

About midnight, however, the night watchman observed that he was breathing too rapidly, trying to pass urine again, being rather uneasy, but not much pained; after watching him for some time he considered it necessary to call the horse-keeper, who in turn sent for me so soon as he had arrived and seen the state in which he then was. On my arrival, between four and five on the morning of the 27th, I found that the animal was standing in a very depressed condition, with haggard expression of countenance, head and ears pendent, mucous membranes injected, breathing accelerated, slight sweatings on the sides of the neck and at the flanks, considerably—but not excessively—swollen abdomen, pulse imperceptible at the jaw, and all the other symptoms indicative of collapse. After making a careful examination, I informed the attendants that he could not live more than five or six hours, and that he was suffering from Peritonitis, the result of rupture of some portion of the intestines. I then took my departure, and when I returned found that the result was that he had died about nine o'clock that morning, about five hours after I had previously visited him.

The *post-mortem* examination made by me about three hours after death revealed a rupture of the rectum, about an arm's length or so from the anus, just beyond the entrance to the pelvic cavity, the opening being large enough to permit of the exit of a dust ball of about three inches in diameter, which I at once jumped to the conclusion had caused it, but on making a further examination of the abdominal cavity no trace of a calculus could be found. The contents of the stomach and larger intestines were perfectly regular and pultaceous, though these organs themselves—more especially the former—were considerably distended with gas; I was therefore forced to the conclusion that the rupture must have resulted from the effects of excessive Tympanitis.

The chief point of peculiarity and interest for the profession in this case, seems to me to be the comparative rarity of the rupture having occurred so far back as to be almost within reach of the hand, and this must be my excuse for recording it. I am further of opinion that the rupture must have existed for the greater part of, if not for the whole day previous to death, while he yet did his work, and at least had not entirely ceased to eat his food, as the peritoneum, both parietal and visceral, was inflamed throughout to a greater or less extent, showing that the irritant causing this had been for a considerable time in contact therewith; and the fact that the mucous membrane and muscular coat of the bowels remained perfectly healthy, proves conclusively to my mind that the inflammation of the peritoneal covering arose solely from contact with the escaped ingesta. In addition to the part actually ruptured, there was another portion almost immediately in contact therewith, which had given way so far as the peritoneal covering was concerned, but the muscular and mucous coats remained intact; this rent extended for about six or eight inches, and had an average width of about half-an-inch, portions being as wide as double that distance.

OBSERVATIONS ON THE TREATMENT OF TETANUS IN HORSES.

BY J. B. GRESSWELL, M.R.C.V.S., AND
ALBERT GRESSWELL, B.A. CH. CH. OXON., M.R.C.S.

(*Continued from page* 80.)

CHLORAL HYDRATE.

Physiological Action.—When administered in medium doses, chloral hydrate causes sleep. This is said to be partly owing to its direct action on the nervous structure of the brain, and partly to the anæmia which shortly succeeds the temporary congestion induced in this organ.

Our own investigations lead us to attribute the soporific effects of chloral more especially to the former of the two above causes, and rather also to congestion of the central organ of the nervous system, than to anæmia. For in cases where small animals have been killed after several rather large doses of chloral the cerebral structures appeared rather congested than anæmic.

Large doses of chloral induce profound sleep, which passes into coma. The number of the pulse-beats are reduced by this drug, or they are rendered very weak and rapid, and the temperature of the animal falls.

At first the pupils contract, and afterwards dilate; it is, however, not always possible to detect any contraction when the drug is administered in medicinal doses.

Chloral hydrate induces great muscular relaxation, and after poisonous doses the animal dies from arrest of respiration or paralysis of the heart. Some physiologists maintain that chloral produces hyperæsthesia, but this is denied by others. In large doses, at any rate, anæsthesia is caused. The paralysis and loss of reflex action seem to be due *to the direct action of the agent upon the cord itself*, for the motor nerves and muscles themselves are not affected by it. Moreover, in a chloralised animal direct irritation of the spinal cord produces less active contraction, than in animals not under the influence of chloral.

The blood pressure is markedly lowered by large doses of chloral; the heart is weakened, and in poisonous doses is arrested in diastole.

The frequency of the breathing is diminished, owing to the action of the drug on the respiratory centre in the medulla oblongata.

Value of Chloral in Tetanus.—On purely physiological grounds we should expect that chloral would prove an invaluable remedy in Tetanus, and, practically, it has been found to be of undoubted efficacy in reducing the number and the severity of the spasmodic seizures of Tetanus.

Mr. D. Gresswell administered this drug for many years in the treatment of this disease, and believed it to be a very valuable remedy. And though chloral does not, in our opinion, exert so powerful an influence in the progress of Tetanus as do aconite, morphia, or tobacco (given in the form of enemata, or hypodermically as nicotia or nicotine), yet, nevertheless, it has proved in our practice, and in that of Mr. Charles Gresswell, of Nottingham, a very efficient adjunct to the more powerful medicines.

Many eminent authorities, both at home and abroad also, have spoken in high terms of the efficacy of chloral in this painful disease, yet it should be remembered that in some, at any rate, of the recorded cases, other remedies, such as morphia, hydrocyanic acid, and tobacco were also administered.

Chloroform.

Physiological Action.—The action of chloroform as an anæsthetic is too well known to need lengthened comment here.

Full doses of chloroform, inhaled or ingested, paralyse and narcotise the cerebro-spinal nervous system. They first briefly excite the brain and the other nervous centres, and then paralyse and inhibit their various functions. The heart's action is at first accelerated, and afterwards steadily depressed, and the pulse becomes weak and soft.

The respirations, at first diminished, became more rapid, but as the narcosis increases they again become retarded and shallow and irregular also.

Value of Chloroform in Tetanus.—In Tetanus chloroform has been administered by the mouth, and also as an inhalation. We have not much experience of its efficacy when given by mouth

in this disease, but in several cases have tested its value when inhaled. If the horse be allowed to breathe over a bucket half full of hot water, to which ʒ iii. to ℥ ss. of chloroform has been added, he becomes quieter in some cases, the spasms become less severe, *and the muscles of the jaw relax.* But the advantage obtained, though, we believe, more lasting than in the case of inhalation of nitrate of amyl, is not permanent. To be of any material advantage chloroform inhalations require to be repeated once daily, and in severe cases twice.

Conium and Conia.

Physiological Action.—The experiments and observations of Paul Guttmann on rabbits, show that conium causes gradual paralysis of the voluntary muscles, and then of the muscles of respiration. The paralysis first begins in the hind extremities, then affects the anterior muscles and those of the trunk, and lastly those of respiration.

This paralysis is not due to the action of the drug upon the muscles themselves, for it has been shown that the irritability of muscles through which blood poisoned with conia has been permitted to flow, is as great as that of muscles of the same animal protected from the action of the poisoned blood by ligation of the blood-vessels.

Nor does conium paralyse by its effect on the cord itself, for if a limb is protected from the influence of the poisoned blood by ligation of both its artery and vein, and the animal (frog) is then poisoned and thoroughly paralysed by conium, the ligatured limb can still manifest powerful movements.

Now we see that the only muscles which in this experiment retained their power of movement were those which were protected from the poisoned blood by ligature of the blood-vessels. Conium, therefore, acts upon some of the tissues protected from the action of the poison, and these tissues have been proved not to be the muscles. It follows, therefore, that they are the nerves themselves. Guttmann has shown that the poison affects the periphery of the motor nerves earlier than the trunk.

Finally, the sensory nerves are apparently not affected. Thus conia paralyses solely by its action on the motor nerves.

Dr. Harley's investigations lead him to the conclusion, that conium is a depressant of the motor tract of the cord and the motor ganglia of the brain. There is much difference of opinion as to its action on the heart.

Value of Conium in Tetanus.—In the treatment of Tetanus in horses, conium has yielded only disappointing results in our hands and in those of many other veterinarians. When given in full doses, the hypodermic injection of conia appears to have some, but not much, effect (and that not permanent).

Guttmann found that conium, even in very large doses, failed to arrest the tetanic spasms in strychnine poisoning.

From our own investigations into the pathology of Tetanus, of which we have given a short abstract in our "Manual of the Theory and Practice of Equine Medicine," pages 326 and 327, it appears that in some cases of Traumatic Tetanus, at any rate, pathological lesions do take place in the cord itself; we could perhaps, therefore, hardly expect permanent advantage from the employment of an agent, the chief action of which is on *the endings of the motor nerves.* We should rather expect permanent advantage from an agent such as chloral hydrate acting on the central nervous system. At the same time the pathology of Tetanus is still enshrouded in doubt.

But whether we regard the disease as a blood disease, or whether we hold with some that the traumatic form is due to irritation of the nerves implicated in the wound, and regard the muscular spasms as the result of reflex irritation, yet we should in either case expect more advantage from those sedatives which acted on the central nerve organs, rather than from those, such as conium and its alkaloid, acting on the motor nerve endings.

The following are the reasons which have been advanced in support of the view that Tetanus is a blood disease :—

1. It often occurs idiopathically without any injury.

2. It is more prevalent in certain districts than in others, and is sometimes enzoötic, affecting several animals in the same district. There is, however, no proof that Tetanus is ever contagious.

3. The resemblance to Hydrophobia and strychnine poisoning suggests a similarity in the nature of the cause.

4. Tetanus is said to be transmissible to men by eating the flesh of animals which have died of the disease, nevertheless this statement requires confirmation ("Manual of Equine Medicine," page 321).

GELSEMINUM SEMPERVIRENS, S. GELSEMINUM.

Physiological Action.—The root of "yellow jasmine," imported from the United States, and its alkaloid gelsemia or gelsemine, are powerful paralysers and respiratory poisons. Ringer says the paralysing action of the drug is best studied in the frog. In these creatures it often causes Tetanus as well as paralysis. With small doses of the alkaloid paralysis only is produced, with larger doses quiverings and tetanoid movements, and only after large doses decided Tetanus. The spinal cord is paralysed, but the motor nerves and muscles are unaffected. The Tetanus is due to the action of the poison on the cord, and paralysis always precedes it. In the property which gelsemia has of first weakening and then tetanising the cord, it resembles jaborandi and its alkaloid pilocarpin, buxus sempervirens, and other drugs.

Gelseminum is a powerful respiratory poison, and generally, if not always, destroys warm-blooded animals by asphyxia before it produces complete paralysis (Ringer).

Gelseminum is said to have febrifuge properties, as it lowers the pulse and depresses the nervous system. It has been much used in human practice in Acute and Rheumatic Neuralgia and toothache. It is an antidote to strychnine poisoning.

Value of Gelseminum in Tetanus.—Gelseminum has been given successfully in a case of Traumatic Tetanus in man. It has not been much used as yet in this country in veterinary practice. Our experience of its efficacy in Tetanus is limited to one case, in which the tincture was administered thrice daily.

Although the case, which was one of the traumatic variety of a not very severe type, recovered, yet we cannot attribute the success to the gelseminum, as other remedies were also given.

As yet, therefore, we cannot speak definitely regarding its value in Tetanus, though we are not inclined, from our limited experience of it, to have much hope in its efficacy.

In the writer's "Extra Veterinary Therapeutics and Pharmacopology," which is now in the printer's hands, we have mentioned the doses of the drug employed, and other facts of importance concerning its therapeutic value and preparations, etc. We are not aware whether others have employed gelseminum for the treatment of Tetanus, but if so, we should be glad to hear of the results.

(*To be continued.*)

VETERINARY THERMOMETRY.

BY A. E. MACGILLIVRAY, M.R.C.V.S., BANFF, N.B.

THE age in which we live is progressive; new things and new ideas are daily cropping up, some useful and some the reverse. In our own profession no more useful adoption than the comparatively recent introduction of the clinical thermometer could well have taken place. Once thoroughly adopted in any one's daily practice, its use and value are alike indispensable; one feels quite at a loss if a good clinical thermometer is awanting!

No doubt certain parties do not properly appreciate—or, perhaps, cannot properly make use of, or disbelieve in even using, the thermometer; this, however, does not detract from the proved benefits to be derived from a thorough, scientific, and practical introduction of the clinical thermometer into the daily routine of practice.

I cannot allow myself to imagine that any member of our profession could be so far left to himself, as even to pretend that *he could diagnose* any disease whatsoever by means of the thermometer; it seems, however, that all members of the profession are not of this opinion (see article on *Tuberculous Milk* in the January number of this Journal). I consider it quite an insult to the profession to insinuate that any one of its members could ever dream of hanging the *onus* of a diagnosis on "the mechanical one of seeing with his eyes the figures indicated on the instrument." The mere idea is preposterous, but quite compatible

with the equally absurd assertion that the "normal gauge" of the bovine temperature is 98·4° F.

In Westmoreland, however, it seems (according to Mr. J. Harrison's observations) that the natural bovine temperature is actually 98·4° F.; if so, I feel bound to assert that Westmoreland is a place with a bovine temperature "all its own"! Away in the North here, our *black runts* cannot get themselves cooled down to such an extent; for, as a rule, in some thousands of observations, with at least a dozen different clinical thermometers, I have found the natural bovine temperature to be, as I have often said, 102° F., and notwithstanding all the extraordinary observations of Mr. J. Harrison, I shall continue to hold on by this *fact!*

In the *Veterinarian* for 1880 and 1881, there occurred some difference of opinion as to the healthy bovine temperature; and in the number of that periodical for January, 1881, I maintained that 102° F. was the natural temperature of the healthy adult bovine; that of juveniles being often a little higher. I observe, in last issue of the VETERINARY JOURNAL, that Professor Walley has noticed that healthy, robust bovine juveniles often run up to 103° F.; the Professor also disposes of Mr. J. Harrison's wonderful fallacy about the 98·4° F. temperature. Mr. Harrison's ideas about bovine thermometry are evidently quite at sea—in fact, he does not make a single correct observation in the whole of his remarks on this topic, and consequently the only inference to be drawn is that his experience is nowhere, and that it is quite evident he knows absolutely nothing about the matter!

It is really quite "astounding" that parties *will* take it upon themselves to write critically (?) upon subjects of which they are utterly ignorant; and not only this, but they will actually wax quite witty, and quote any amount of Latin, forgetting that their wit is aimless and their Latin quite irreconcilable with the context.

Returning to our object-in-chief, I may perhaps be allowed to quote an undoubted authority as to the thermometry of our domesticated animals; and I am the more anxious to do so, as it really seems but too apparent that the general ideas current on

this subject are neither satisfactory nor correct. According to Krabbe, then, the following may be accepted as representing the temperature of our various domestic animals in healthy adultism :—

Horse ... 100·8° F.	Dogs ... 102° F.
Cattle ... 102° F.	Cats ... 102·4° F.
Sheep ... 103° F.	Pigs ... 102·5° F.

These figures I have found in some thousands of observations to be quite correct, and I beg to submit them to the profession as a sound and thoroughly reliable basis for all future clinico-thermometrical observations.

In our semi-domesticated animals, such as the camel* and elephant, the natural temperature stands, according to J. H. Steel, thus—

Camel ... 99° F.	Elephant ... 97·6° F.

The great variation apparent in these two sets of figures shows how ridiculously foolish it is to suppose that *one temperature* holds good in all healthy adults—whether human or brute! For instance, if the natural temperature of the sheep were found in the human subject, a high and even dangerous degree of fever would exist in the latter. Reverse the process, and find a sheep registering 98·4°, and we should find our ovine patient (if not defunct) at death's door! The truth of this was brought out during Mr. J. H. Steel's observations on camels, one of which, apparently in good health, ran up to 102·6° F., *and died next day from Anthrax.*

Some other member of the veterinary profession in or near Westmoreland might favour us with a few observations on this interesting topic, and either confirm Mr. J. Harrison's assertions, or otherwise convince him of his errors.

* We have always considered the camel a domesticated animal, and in the countries where it is employed it is in this respect quite as much so as the horse or ox. It is a question whether wild camels exist in any part of the world. Even the elephant in India is perfectly domesticated.—ED. *V. J.*

PARALYSIS IN EWES CAUSED BY EATING "SCROPHULARIA AQUATICA" ("GREATER-WATER," "TIGER-WORT," "WATER-BETONY").

BY T. RUNCIMAN, M.R.C.V.S., MARKET DEEPING.

ON the 22nd of January last, I received a message in the morning to go at once to a farm three miles off, as the owner had some ewes bad from eating too freely of mangolds. On my arrival I found six in-lamb ewes in a house—five of them quite unable to stand; if lifted up they immediately tumbled down if not balanced against the wall. In fact, they were perfectly helpless. The sixth one reeled and staggered, but was not so helpless as the others. There was complete loss of appetite and constipation of the bowels; kidneys inactive. The mangolds were evidently not at fault.

On inquiry I found they had been brought home five or six miles off, two days previously, and put into a field through which runs a large dyke or ditch; this dyke had lately been cleaned out, and all the herbage and refuse flung on to the bank.

On proceeding to the field, I could see that wherever any of this plant was about among the dyke cleanings the leaves were all cropped close off. I had no doubt in my own mind that this was the cause of the illness amongst the ewes. I have never heard or read of this plant producing illness among stock; probably in its green state they instinctively shun it. This was in a partially dry state.

The treatment consisted of purgatives, followed by stimulants and nux vomica, and I am pleased to say they all recovered. One had partial paralysis of a hind-leg for two or three days after the others recovered; but another aperient seemed to have a good effect.

RHEUMATOID ARTHRITIS (SO-CALLED "KUMREE," PARAPLEGIA, ETC.).

BY OFFICIATING INSPECTING VETERINARY SURGEON R. POYSER, F.R.C.V.S., BENGAL.

FROM time immemorial to the present, the terms "Kumree," "gone in the loins," "windstroke," or more technically, "Paraplegia," have been generally and naturally accepted by the lay community—and too readily, perhaps, concurred in, and even employed, by the veterinary profession itself—as empirically descriptive of conditions affecting equine life hitherto characterised by occult and grave pathological phenomena, from which the subjects of them are temporarily or permanently incapacitated for work, and from which no small number die annually, more especially in some parts of India and Burma.

That the true nature of this frequently-recurring and, it must be said, fatal malady should so long have been shrouded in mystery, that the veterinary medical profession should have been contented to accept mere tradition as gospel, and thus have perpetuated its own shortcomings as to the real pathology of "Kumree," is not a little surprising; and who can shirk the blame that attaches?

It certainly was neither from want of opportunity nor of veterinary surgeons, but it has been taken for granted by the profession, generation after generation, that all had been said and written upon "Kumree" that was possible, excepting as to the causes, which attracted more than ordinary attention whenever it assumed an epizootic character and was unusually fatal.

In fact, it was regarded as a malady not to be further understood if further investigated, which the literature on the subject seems to prove. Consequently "Kumree" has appeared periodically, to be treated empirically, and it has disappeared with little more than passive consideration. But, strange to say, a pathology was written for it, which has been persistently and conventionally repeated on the same fallacious lines.

Indeed, its pathology is to this day considered practically

settled, the organs more particularly implicated being said to be the posterior part of the spinal cord, the motor nerves therefrom arising, their capillary circulatory system, and those organs to which the said nerves supply motive power, whose loss constituted the most prominent and manifest symptom of the disease.

Its causes, however, were never so definitely decided. They were more speculative because less tangible and manipulative.

A retired authority has left it on record that "Kumree" is purely a dietetic disease, arising from the baneful influence of ergotised seeds, which, be it known, are never seen in the grain or grass forages given to Indian horses, troop or otherwise. He inferred this on the ground of once having seen or heard of equine Paralysis in Scotland, said to have been produced by ergotised rye.

Another authority—the latest and youngest—who was awarded 200 rupees for his essay on the subject by the Government of India a couple of years ago, advocates the use of ergot of rye as a curative medicine in "Kumree." He has, however, made some correct observations, especially as to the action of the wind on a heated system, and the specific result thereof, and emphasised the "chill" produced as the chief cause.

A third authority, who cautiously states that the "disease is caused by some local influence favoured by the season of the year," is correct up to this point, and wrong in believing it to be "due to something conveyed with the food (grass or grain) that flourishes at some stations more than others in the autumn months." He "cannot account for the local influence," for "statistics negative the idea of its being caused by sun or wind." The statistics, however, are incorrect and incomplete.

Post-mortem examinations were always made in the lumbar region, to account for that most palpable but deluding symptom, paralysis, and thus resulted softenings of nerve-tissue, serous effusion, hypertrophy of individual nerves, and a host of microscopic deflections from health, enough to account for anything anywhere. It never seems to have occurred to investigators to look elsewhere for pathological lesions; no, it were sufficient to treat and to account for the one symptom, paralysis.

Disease found in organs remote from the supposed seat of

"Kumree" could not be credited with the production of loss of power. When, however, professional experience was unbiassed with the idea that "Kumree" was a purely paralytic affection, a more correct, though incomplete, estimation of the real disease was arrived at, and notably in two cases to be referred to. And it was here, in the first of these instances, that the author of this article received his earliest impressions as to the fallacy of the old doctrines, and as to the true character of "Kumree," from which two horses were then dying.

The veterinary surgeon in charge had—never having seen or been taught to see "Kumree"—diagnosed the cases as "Acute Rheumatism."

The similarity between these affections before and after death was forcibly impressed on the writer, who then communicated his views to the above officer: this was in October, 1881, at Bareilly.

Though it is now known that the *post-mortem* examination was not carried far enough, yet it was sufficiently prosecuted to disclose in part the actual state of affairs, which Veterinary Surgeon J. J. Philips placed on record in a scientific journal as "Rheumatoid Arthritis," a term suggested by the writer, who determined if possible to confirm the conclusions almost accidentally arrived at; this was done in November and December of the same year, during a tour of special duty between Bareilly and Ranibagh, amongst Dak ponies.

Further opportunity was not met with until August, September, and October of 1884, when so-called "Kumree" appeared in Meerut, in an epizootic form, among the horses of the 8th Hussars, Royal Artillery, 13th Bengal Lancers, and of private owners.

The *ante* and *post-mortem* testimony here furnished was not only abundant, but overwhelmingly corroborative of the opinion the writer originally formed.

Mr. Garratt, the veterinary surgeon in charge, who had formed an approximately correct idea of the nature of things, diagnosed the cases as "Acute Rheumatism." He, too, was unbiassed in "Kumree" of the old theory, and was otherwise happy in meeting with the early symptoms—diagnostic of Rheumatism

—and in not being brought suddenly upon the more secondary signs which would in all probability have led him, as they have done others, to register them under Paralysis.

Such cases occurring simultaneously at Saharunpore have been called "Kumree," at Umballa and Muttra, Paralysis, and in Morar, Brain Disease and Paralysis.

Inspecting Veterinary Surgeon Professor Kettlewell believes that *some cases* are complicated with Cerebro-spinal Meningitis; and it is not unlikely that this complex phase may obtain, as he says, in some, and possibly in the worst cases.

With this history and other evidence before him, Mr. Poyser claims the honour of first determining that "Kumree" is not a purely paraplegic or paralytic affection; that the loss of power is here merely a palpable expression of the sufferer's inability to support his own weight, or to rise without assistance when down, on account of the intensity of the pain experienced in the affected joints and the tissues connected with them, and other organs concerned in maintaining a standing position, and instrumental in the act of rising from recumbency, as well as in other movements; that the hinder parts are not the only sites of the disease, and that the heart is always seriously implicated, at least in the more severe types, and which have been irrefutably proved both during life and after death.

It is to be distinctly understood that the recent equine epizootic in Meerut, which terminated fatally in eleven out of about one hundred attacks, is no new disease; it is simply a very old one with a new name, and the same with which the writer had to contend in Meerut twelve or thirteen years ago, there and then registered as Kumree or Paralysis. The new technicality fairly describes its character and defines its locality, whilst being, at the same time, consistent with its symptoms and pathology; henceforth, then, the terms Kumree, Paraplegia, Paralysis, and allied phrases, must be considered obsolete, but not the disease.

The author is anxious that the information may without delay be brought to the notice of all concerned, amateur or professional, with the view to the latter, at least, concentrating their thoughts and treatment upon parts which are really affected,

and forsaking those which are probably little if at all implicated, but treated, to the detriment of the dumb patient.

It is not now intended to fully discuss the subject, but as to its etiology, Mr. Poyser regards the exciting cause as purely climatic, or better, perhaps, atmospheric, producing in plain language a "chill" and specific consequences; yet he does not disregard the co-agency of predisposition, which possibly may be partly induced by certain dietetic influences whose nature we are not prepared to discuss.

However, with its causes known, and with its pathology understood, "Rheumatoid Arthritis," late Kumree, etc., should meet with many more happy results than formerly under intelligent treatment, and relative to which, one item, originated by the writer years ago (though then unacquainted with the true phases of the disease) and adopted with much success ever since by him and others to whom it was suggested, must be mentioned, indeed forcibly impressed on all who have the charge and treatment of horses in their hands, viz., the use of slings. Suggested to him in the recent epizootic at Meerut, Mr. Garratt affirms that without them nine or ten other cases would have died.

As soon as a horse is unable to stand or rise without assistance, he should be placed in slings, though he may have to be hauled up like a log, plunge violently, or hang helplessly, in them.

To the uninitiated this operation may in some cases appear rather cruel, but the patient will soon gain his feet and confidence, quieten down, and experience comfort from the support. The results are marvellous.

In Rheumatoid Arthritis horses unable to stand seldom remain long quietly recumbent, or in the other well-known position of rest, but generally struggle most violently, and become (hyperæsthetic) intensely excited, which, persistently maintained, hastens dissolution, especially so where the heart is seriously affected.

The restraining influence, then, of slings in such cases is most beneficial, moreover they maintain the horse in a more natural position than he would or could place himself in, and obviate serious abrasions to the skin, etc., on all prominent parts.

Where the heart and the interior of the larger blood-vessels

are extensively implicated, the chances of recovery are rather remote.

With one or two exceptions all the slings in the veterinary infirmaries of the army in India are clumsy and most difficult to manage. The differential pulleys should be adopted throughout the service: they have an endless chain, and hang from a single (point) hook, beam, or bough anywhere; the chain pulled on one side raises the horse, on the other, lowers him, and locks itself when the hauling pressure is removed. They can be regulated to the fourth of an inch, which is a very important qualification, and by one person. The pulleys and chain are cheap and practically everlasting.

The Carabiniers have had a set in use about seven years, brought out (blocks and chains) by Mr. Poyser.

The main preventive measures to be adopted in the disease under note, demands the greatest care from veterinary surgeons in regulating clothing, and protecting against extraordinary vicissitudes of climate in the rainy and autumnal months.

Notwithstanding care in this direction, cases occur which are not expected, and thus we are inclined, rightly or wrongly, to accord the cause or causes a specific influence.

THE RELATIVE VALUE OF SUBJECTS TAUGHT THE VETERINARY STUDENT.

BY THOMAS GREAVES, F.R.C.V.S.

(Continued from page 399, vol. xix.)

VETERINARY TEACHING.

IN further considering this subject, I feel I must not omit to bring prominently before the notice of my readers the fact that when the additional session, or third session of collegiate curriculum, was agreed upon by the Royal College of Veterinary Surgeons and teaching schools in 1876, I repeatedly urged what I considered to be a just and fair settlement of the question, that a distinction should be made between the students who had seen practice, or, in other words, who had served a term of apprenticeship to a veterinary surgeon, and those students who had not

had such advantages. That is to say, the former should be required to serve two sessions at college, and the latter should serve three sessions (see *Veterinarian* for 1871, page 920; also pages 107 and 249 for 1876). I considered it opportune and appropriate, since the clear understanding at the time was that this third session should be devoted exclusively, or nearly so, to the teaching of practical knowledge. However, I was overruled, and in my simplicity I hoped—nay, I was led to believe—that the practical student would be none the worse for the additional session and the additional expense he would be put to by having to stay at college one session more, and that the non-practical student must, of course, be greatly benefited by it.

Here is an instance in which confiding human nature sometimes errs and builds castles in the air, is lured on by specious and plausible theories to hope for results which experience afterwards proves were fallacious and not to be realised. It is useless to argue with those persons who maintain the contrary. We find that after this regulation has been in existence eight years, and the summer session inaugurated in 1872 to teach botany, practical pharmacy, the principles of shoeing, anatomy, and therapeutics, that the result has been anything but satisfactory. There is now a greater percentage of rejected students than was ever known in the history of our profession. To say the examinations are more rigid, or are too rigid, is not a satisfactory answer. We think this result ought to shake the prejudices of the thoroughgoing anti-pupilist.

It is not without a considerable degree of pain and sorrow that I write in this strain about my profession; it would be monstrous for any one to make these imputations if it was a fact, and a fact admitted, that the students of the present day, when they present themselves before the examiners, were a decidedly superior class of students, having a wider range or grasp of thought, more refined, more cultured, and more scientific than they were eight years ago; that they can diagnose and prognose disease and lameness more accurately, and can restore sick and lame horses to health and soundness much sooner, and with much more certainty than they did before they had the advantage of these additional courses of college tuition. I may say

if such was the fact, the whole body of the profession would feel proud of their colleges and of the change that was made. None would rejoice more than myself, for talent is always in demand; but when the contrary is the fact, surely that is a sufficient reason for bringing it prominently before my profession? I have heard it said that the present students are an inferior class or race of men than formerly; but what is the use, I would ask, of insisting on the students knowing the particular shape of a crystal, or of qualitative or quantitative analysis, while he is left in ignorance as to the difference in the nature of a hernia and an abscess, or a distended bursa containing synovia and an abscess containing pus? or whether five grains or five drams of calomel is the proper dose for a horse; when he tells you that a pint of croton oil is a proper dose, two ounces of belladonna, or half a dram of corrosive sublimate is a dose; or whether six drams or six ounces of Barbadoes aloes is the ordinary dose to purge a horse. Is such culture a blessing, I would ask? for such a one, so taught, to succeed in practice would indeed be a supernatural phenomenon.

I may be asked here, Are older practitioners perfect? Do they not frequently make mistakes? I answer, Yes; they occasionally do, but not such glaringly gross blunders as we have here; and it is often by those who have not had the advantages of seeing extensive practice, and probably being of that class who saw next to none before they obtained their diploma.

It is the merest affectation to deny that the practical efficiency of a student, as he presents himself before the examiners of the present day (speaking of the students generally), is decidedly inferior to what it was before the change was made; that our actual practical usefulness is passing away. We are suffering in many important particulars. The decay of the apprenticeship system shows that some other method is absolutely necessary, by which the usefulness and high reputation of our noble profession can be kept up. The necessity of a thorough overhauling of this unwieldy and cumbrous official machine is self-evident. This decadence is palpable to any man who has a capacity to decern and weigh evidence; he must arrive at the conclusion that, notwithstanding this third session, the extra summer term

and the fact that it is admitted on all hands that the subjects of botany, materia medica, chemistry, anatomy, physiology, histology, and morbid anatomy were never before taught more thoroughly than they are now (which, by-the-by, many of the members of my profession think and say the study of some of these subjects is only a waste of time of the student, for what good they are to him in after life?), we are not training up a race of men well fitted for veterinary work; our colleges fail to give an adequate education, complete in itself; the tuition they give is deficient in clearness, commensurate with its importance. Let the colleges import a little more science, and eliminate a little more of the practical tuition, and in a little time there will be none of the practical element left. The mere theorist rarely evinces practical wisdom; to give good advice implies no capacity to follow it. Teachers are not always to blame—there needs to be an intelligent understanding of what is really useful in our teaching. I know also that there are students who are habitually unobservant, who seem to be neither very worthy nor very worthless, who have no will of their own; who, it would seem, cannot learn; nor can they, unless they have a will made up to persevere and to acquire. The difference between man and man is not half so much the difference between talent and talent as between will and will. The will determines the moral character, and, therefore, the intellectual success. The possession of brilliant intellectual qualities often proves a bar to worldly advancement. Give me a firm, steadfast will, with moderate talents, and I will accomplish more than the possessor of the most brilliant qualities with an inferior force of will. They are more or less shiftless, idle, unenterprising, or improvident; in truth, the possession of ability without a corresponding will, is too apt to open the door to indolence, waywardness, and want of mental discipline. There is a fatal facility about the man of talent—especially if his gifts are of a popular kind—against which he cannot exercise too much caution, lest it betray him to his mental ruin.

I am of opinion, therefore (and I am not alone in this opinion), that this regulation of an additional year to the college term, and the additional summer term, has been fairly tried, and has

proved a failure—a decided failure ; and by parity of reasoning, I hesitate not to say that if the collegiate curriculum was extended to a still further period, of say four, five, or six years, we should arrive at a state no nearer satisfaction or practical efficiency of the student, than we have now. The mind of the man who is thoroughly acquainted with classics and science, but who is deficient in business tact and business habits, is nearly always found to be out of harmony and out of sympathy with the minds of horse-proprietors, horse-owners, and horse-keepers. In considering this subject this fact must never be forgotten, that our profession is a peculiar calling. It is a special profession, requiring a special kind of tuition. To many excellent men of the above type, when they have had experience of life, the sad earnestness and vivid exactness of this truth has flashed upon them. To be well educated is not merely to possess this or that branch of knowledge ; it is more—it is to have the mental powers developed, strengthened, and disciplined ; it is to have gained habits of accurate thoughts on the business of life, and thus to have stored in knowledge as a result, and as the basis of a yet wider range of mental pursuit. These powers or habits, once acquired, are available for any given mental exertion. I am in favour of pupilage, but not compulsory pupilage. We have no right to ask where, or how, or when the student obtained his practical knowledge, so long as he has it.

One of our ablest teachers we have of the present day devotes from a quarter past nine to about one o'clock, nearly every day, instructing the senior students in anatomy, practice, conformation, symmetry, morbid anatomy, pathology, etc. Now, I cannot tell that I ever heard anything in my life that pleased and delighted me more than this did. It must be true, since he says so, but I think it is fair and reasonable to conclude that students who have received this instruction, this persistent diligent course of four hours daily, for say six months, must have every disease, every phase of disease and lameness (their pathognomonic symptoms, nature, and treatment) that the horse and all other domestic animals are liable to, at his finger's end, so to speak ; or, in other words, they should be as A B C to him, and that he would be able to explain, and answer any and every question an

examiner could possibly put to him on diseases and lameness of our domestic animals with ease, and satisfactorily. But is it not very strange this is not so? nine-tenths of the rejected students are rejected on the practical or pathological subjects.

I now come to the point, and ask, Is it not our bounden duty to inquire into the cause of this failure, try to arrive at a safe and sound judgment, and devise a remedy? It is a matter of the utmost seriousness, as it affects the future character of the veterinary profession; it is of national importance; the very existence of our professional reputation is at stake.

The real strength, and power, and greatness of our profession lies not so much in our high scientific attainments as in our *actual usefulness, the real value of our services*, and these services admitted and acknowledged by our Government, and by all who employ us. Such a consummation is not unconceivable, but it is very much feared it cannot be obtained by our present method of tuition, whatever some pessimistic observer may say to the contrary.

At one college, the junior students have four lectures a-day: I was pleased to hear this. At another college, only seven lectures a-week are given the junior students. I ask, in this case, is there not a complete waste of most precious time? Is it not all but certain that these youths, with so much leisure, so much unoccupied time on their hands, will get into idle, loafing habits, walking the flags of the street for want of being better employed? I would respectfully ask, Could not this time be utilised for the benefit of these students? Have we not all heard of the mischief, the mental, bodily, and spiritual ruin it creates? Cowper says the colour of our whole life is generally such as the first three or four years in which we are our own masters make it. Lost time, I hold, is not lived. Is it not, let me ask, often under these conditions where immorality commences?

The process of lecturing, demonstration, experimenting, and cramming is unquestionably necessary in the teaching a knowledge of the various scientific subjects I have referred to above (whatever high value we may or may not put on any one or on all of them). The thorough teaching of horse and cattle pathology and treatment was held by Professors Coleman, Dick,

Sewell, Spooner, Messrs. Youatt, Percivall, Wilkinson, and many others, to be *of by far the greatest importance of them all* in making a man a good business man—one who will be a sucessful man, a credit to himself and to his profession. To accomplish this a very different method of teaching is required. The mind and the fingers of each student, student by student, individually, must be brought into close contact with every kind of case—shown, and instructed *to do it himself*—under the close attention and instruction of a competent, firm, and untiring, painstaking teacher. We must get a clause of compulsory education enacted. This kind of teaching must be kept up hourly and daily, systematically, methodically, many hours a day daily, for six months at least, so as to render each student familiar and conversant with every phase of disease and lameness. This system of tuition should be going on all day over—every day—upon both the living and dead subjects; every possible subject and particular should be A B C to the student; every point and every matter that an examiner could touch on should be shown to them and explained over and over again, not only in lectures, or demonstrations, or cramming—before sixty or eighty students at a time, many quite indifferent about it, BUT IN ACTUAL WORK—a regulation duty. The discipline of life—its rugged experience, its tempests, its trials—all go to make a man; yea, the successful man invariably bears on his brow the marks of the struggle which he has had to undergo. The college method of teaching practice will never of itself, as taught now, enable him to obtain that amount of solid pathological and practical knowledge to enable him to make his way in the world when left to himself. The practical student's knowledge may be corrected, improved, increased, and rendered more effective by the college teaching. I do not say Utopia is a land not so very far off. I say by this system it will be nearer; but the present teaching, by itself, is a system fraught with danger, and is seldom productive of lasting benefit.

On this subject I wish to direct your attention to that most excellent introductory address, delivered by Professor Brown at the Royal Veterinary College, on October 1st, 1884; after saying "May I be permitted to say fatal—facilities for acquiring know-

ledge," he goes on to say, "under this extended system of tuition you are not asked to seek the mental food which you require—it is collected for you with elaborate care, triturated into a fine assimilable condition, and positively thrust into your mental stomachs very much in the same way that men feed poultry for the market. It is quite conceivable that in taking your learning in this luxurious way you may fall into a somewhat somnolent condition—in short, that you may over your studies fall asleep and work them out in a dream." Now, it is very good of the Professor to make the royal road to learning so easy, so soft, so velvety to the feet. Although it is a matter of extreme delicacy to question a learned Professor's conclusions, I would respectfully ask, Is this system of imparting and acquiring knowledge without labour the most lasting, the most enduring, or the wisest? Is it not enervating in its tendency? There may be one student in a hundred who possesses an extraordinary retentive memory, who will remember this cramming for a short time. Knowledge gained in this easy way, we are told, is always very evanescent; to take root in your understanding it must be by a process of assiduous, intense application, a work of time and close observation, so as to sink deep into your memories and bear its fruit throughout life.

Professor Robertson says, "The student can acquire practical knowledge after leaving college, that in his daily avocation he is gaining experience, in his daily work he has given him opportunities of improving himself; but with reference to all the other subjects he will have no opportunities of improving himself, therefore it is the more important that he must be taught them efficiently before leaving college." Now, we grant him that there is a good deal in this view of the case; but our contention is this—that some of these other subjects he seems to think so highly of are unimportant, and are dwelt upon too elaborately, wasting the time of the student—time that could, and should, be put to much better and more useful advantage. I will instance to him how it acts. I, as a general practitioner—and I know of scores of others—would ten times over rather receive a youth of sixteen, seventeen, or eighteen years of age who had never seen any practice at all, than one of these gentle-

men from college, with a diploma, who wanted improving. The one, of course, is never entrusted with the entire care of a case, or to attend a case until he has been in the place some time and seen his master do a good deal, and he himself has become accustomed to the work under his master's supervision. In length of time he may be sent out to see some simple case by himself, and thus gradually assume a position of trust and responsibility, which he has by degrees become competent to occupy; but the other fully graduated or qualified veterinary surgeon, having studied the full time at college, and obtained his diploma, is looked upon as a man. This man often assumes the possession of a knowledge of which he is sadly deficient; he is entrusted to see and attend some simple cases—it is natural to place more responsibility on him than you would on the boy. What is the consequence? Nearly every case he goes to see he makes some glaring blunder in his manner, in his diagnosis, or in his treatment, and unless you are close upon his heels, and correct his blundering, your client is so displeased, dissatisfied, and disgusted that some one else is called in and you lose client after client, each worth perhaps £20 or £40 a year to you. This is one effect or result of the Professor's method, but if such a one goes into practice on his own account the result is still worse, he lowers the status of our noble calling, he brings discredit and disgrace, not only on himself, but also on the college at which he matriculated, and on the profession generally.

I have read with much pleasure, and beg to thank Mr. John Penberthy for his trouble and kindness in making the statements he has made, statements which must be true since he says so; also Mr. E. T. Shave, for their criticisms in this January's VETERINARY JOURNAL on my papers; it is this kind of criticism, undertaken in a fair and gentlemanly spirit, that I expected and hoped for; I wished to put the colleges on their mettle, and force them to produce, if possible, students more useful and more really fit for veterinary work. I consider their papers fair and legitimate efforts to throw light upon and elucidate the deadlock into which we are fast drifting, with the exception of a few instances in which they have done me a glaring injustice, which, however, I pass by without notice, asking only one question

of Mr. John Penberthy, viz., How is it, with all these great and varied advantages, Colleges do not produce a greater percentage of efficient practical students? How is it there is such a very large percentage of rejections, and of those who manage to squeeze through, that fifty per cent. of them are found utterly incompetent to enter the army? But what am I to say of another precious document—a reply of unanswerable argument, of logic without a flaw, from the same locality, from one who ought to be looked up to and be an example to us all, from whom we expect to find high and noble thoughts and sentiments, instead of which we find fifteen lines brimful of animus, and remarkable only for low, common, vulgar gibes, which constitute the whole weft and warp of this precious reply?

Editorial.

ABORTION IN CATTLE.

THE seemingly increasing rate of abortion in cattle, the greater attention which is paid to cattle-breeding, or the enhanced value of bovines as milk and flesh producers—or all three causes combined—have gradually drawn attention to the heavy losses suffered from the occurrence of this accident in these animals. Of all the domesticated creatures, the cow is certainly the most liable to suffer from abortion and premature birth, and the liability appears to be almost as great as in the human female, though the latter, one would be inclined to think, is exposed to more morbid and varied influences and predisposing causes. This special aptitude of the bovine over all other species has been attempted to be explained on various grounds—some supposing it to be due to anatomical, others to physiological, and others, again, to the psychical or mental peculiarities of cattle. Whatever it may be ascribed to, there can be no doubt as to its existence, and the readiness with which it can be brought into play is sometimes manifested in a very startling manner. The influences which bring this unfortunate aptitude conspicuously under observation are many, and they may be classed chiefly as mechanical, physiological, and pathological. With regard to these, the most complete and most recent information is to be found in Fleming's "Veterinary Obstetrics," in which everything pertaining to the subject is fully discussed in its aspects of accidental, sporadic, and enzoötic and epizoötic abortion. To this work we refer our readers who desire to learn all that is at present known of this accident; our particular object now being to direct attention to one of its possible causes, which certain sanitary measures may, if promptly and carefully carried out, possibly remove—we allude to infection.

As Fleming has pointed out, the causes of sporadic abortion may be grouped into external and internal, and consist in physical and physiological, as well as pathological influences, which are well known to produce this effect. These he has described in detail; but another cause to which he has urgently directed attention, and to which the occurrence of extensive abortions appears to be due, is infection, owing to the presence of a contagium, micro-organism, or whatever else it may be termed. The notion that certain forms of abortion were caused by an infective element is by no means novel; as Fleming has shown that at least so long ago as the end of the last century, it was believed to play the principal, if not the sole, part in this morbid process. But the accumulated clinical evidence of the last fifty years, together with the results of microscopical and patho-experimental research, have established to a great, if not a conclusive, extent the presence of an infective agent in one form of abortion. Therefore it is that veterinary surgeons who are consulted with regard to this accident, whether in the way of prevention, arrestation, or cure, should, after considering the other causes alluded to by Fleming, give their special attention to this, and follow as closely as the circumstances may permit the measures he has counselled to meet the requirements of such cases—these consisting in treating abortion in a herd of pregnant cows as we would a very infectious malady, special steps being adopted to meet the special chances or modes of infection.

DISEASES OF STOCK.

In the course of his opening lecture to his students, Principal Walley, of Dick's Veterinary College, said:—The scientific aspect of the great question of battling with disease in stock has been placed in an entirely new position of late years by the discoveries which have been made in connection with the causation of contagious diseases. The discovery of the bacillus of Anthrax was probably the starting-point of this new knowledge, and not long after this discovery Chauveau's experiments in connection with the contagium of Variola, proving as they did that its propagation was due to solid particles of matter, gave a new impetus to the inquiry. The *germ theory* became a craze then; it is none the less so now. As the gardener looks for the seed by which to propagate the plant, so the pathologist began to look for the seed of every disease whose characters warranted the assumption that it was of germ origin. I need not, at this time of day, point out to you how pre-eminently successful the search has been, but I must point out to you that, notwithstanding this, the millennium is very far from being reached. The success attending vaccination in the prevention of Small-pox led to the hope that all other diseases of a similar class would, in the end, be dealt with in a similar manner. The apparently brilliant success of Pasteur with Anthrax virus encouraged the hope that at last we had within our grasp a potent weapon of offence and defence; and now endeavours are being made to muzzle the bear of infection in connection with diseases widely different from Anthrax in their general characters. I would here ask, has the hope to which I have alluded been realised? I venture to assert that it has not; that in spite of the immense labour, and the wonderful amount of perseverance and of brain energy that have been brought to bear upon it, the ends gained have not been entirely commensurate with the means used to gain them. In our dealings with the contagious maladies of animals the question

naturally arises—What are the best and most direct methods to adopt for their prevention and suppression? Are we to institute interminable inquiries as to their nature, and to carry out innumerable experiments to prove this theory or to disprove that? to sacrifice hundreds of animals with the object of providing a physiological antidote to them, and when we have, as we think, found it, have some other inquirer breaking in upon our stronghold and telling us that it is all a mistake, and that while we have been labouring to bring forth and perpetuate this mistake our enemy has been steadily stealing a march upon us? or are we at once to take the bull by the horns and arrest his further progress by main force, to grasp him by the throat and strangle him out of existence? This, gentlemen, is the all-important question for us to consider. When Sheep-pox made its appearance in this country, over twenty years ago, there were then, as now, two sets of sanitarians—one set endeavouring to suppress it by purely scientific means, the other by purely practical. Which of these was successful? Not the former. When the dreaded Rinderpest came amongst us in 1865, the same battle was fought—the "vaccination point" of the doctors *versus* the "pole-axe" of the veterinarian; and of these two, which, I ask again, gained the victory? It is a matter of history; it was a lesson so plain that it need never have been necessary to repeat it; but repetition has been required, and will be required again. In the case of Glanders, too, scores of years have been spent in endeavouring to find a therapeutic antidote—a cure; and valuable human lives have been sacrificed in the struggle. Now we know that by putting a few practical regulations into force we can not only "scotch the snake," but "we can kill him also." In the case of Pleuro-pneumonia in cattle, science, partly-blinded certainly, endeavoured thirty or forty years ago to get the mastery by creating a mild form of artificial disease in healthy animals, which should render them proof against the more virulent natural form. The success was only partial, and the same experience has been bought more than once since; and in those countries where it has been most extensively tried it has yielded to more purely practical measures, and notably so in the Netherlands. And what about those dread diseases, Rabies and Anthrax? While in France, science, in the shape of a Pasteur, is putting forth her best energies to find an antidote for Rabies, and is thereby *playing with the malady*, we, in this country, or, I should more particularly say, in this city, taught the lesson that it could be exterminated by purely practical means in a much less space of time, and with much less attendant danger to man and suffering to animals than it can ever be by the adoption of purely scientific measures. True, it may be said, our measures demand a holocaust of victims, but these victims were dangerous and useless pariahs. And is there a smaller demand in the working out of the system of Pasteur? We did not tickle the medulla oblongatæ for inoculative and reinoculative purposes of our victims; we effectually paralysed and annihilated their powers for harm in the best and most practical manner, viz., by destroying them; and if measures had been adopted, as I would have had them adopted, promptly at the commencement of the epizootic, there would have been a shorter tale of destruction to tell than there was at that time. While again, in France, hundreds of victims have been sacrificed in the search after an antidote (discovered, it is triumphantly said) to Anthrax, we in this country find that by the adoption of practical prophylactic measures we can attain equally favourable results. And I would have you bear in mind that success has not by any means been attained in the scientific prevention of Rabies any more than in Anthrax. The former inquiry is but yet in its infancy; the latter has got past the stage of inquiry, and, according to some authorities, is an accomplished fact; but what do we find? Pasteur and others supporting the practice of protective inoculation; Koch and others condemning it, and

furnishing indubitable proofs of its frequent failure, especially where the spores of the microbe are taken in by ingestion. The discovery of the bacillus of Tuberculosis was a grand discovery, but it is a fact with which we were inferentially acquainted long since, and it has not added, nor can it add anything, to our knowledge in a prophylactic point of view. Certain it is that the discovery has been of great use, clinically, in human medical practice, but it is of little practical clinical value in veterinary practice. I am quite aware that a series of cases have been recently recorded, tending to show that it is of practical importance to the veterinarian; of these I can only say that, if we had to wait until we detected bacilli in the expectorations of our patients, we should, as a rule, have to wait until the time had passed when it would be a disgrace to the veriest tyro in practical diagnosis if he had not succeeded in forming something more than an opinion as to the nature of the malady from which his patient was suffering.

Another organism which has attracted much attention of late is the comma bacillus of Cholera, and yet even before the ink which was used for writing the report of the discovery was well dry, we had a declaration from no less an authority than Dr. Klein, to the effect that this bacillus is not special to Asiatic Cholera. Even if it were so, it is questionable whether it could ever be utilised for prophylactic purposes.

In addition to these more serious germ diseases, we have other maladies affecting animals which are due to specific organisms, viz., the *ray-fungus* disease of cattle, and *roup* of poultry (both due to special forms of fungi). Now, while it is highly important that we should know the exact nature of the causes of these affections, the knowledge does not put us in a much better position, so far as prevention or even cure is concerned, than we occupied before. We can only resort to local means of destroying the fungus—as was done prior to our knowledge of its actual nature—and to the adoption of such methods as will improve the surroundings of its victims, and preventing the propagation of contagion.

Black-quarter and Red-water in cattle, Louping-ill in sheep, and abortion in cows, have each in their time been attributed to the influence of certain organisms; but assuming the statements made in connection with these affections to be true—which in more than one of them we have much reason to doubt—does the knowledge give us any greater hold upon them in reference to their prevention? We know that each one of them can be largely prevented by the adoption of practical measures, which, directly, do not affect germ growth and multiplication.

Now, gentlemen, in all that I have said I do not wish for a moment to place a small value on the efforts which have been made in various parts of the world to discover the true nature of the most serious class of maladies with which we have to deal. In warfare a correct knowledge of the habits, the strength, and the character of an enemy gives a commander the means of grappling with and overcoming him; and so it is with our daily battle with contagious diseases. What I want to impress upon you is the necessity of making yourselves thoroughly acquainted with the best means of dealing practically with this enemy, and our success in this direction in the past is an earnest to you of what may be accomplished in the future by energetically and vigorously putting appropriate measures into operation.

In dealing with sanitation, viz., "The sanitary arrangement of the buildings used for the housing of animals and the supply of food to animals," I would first observe that it seems somewhat remarkable that in this advanced period of the history of the world there should be any room for adverse criticism on our knowledge of such subjects; but such is the case, and we must deal with it. One would think that at least an elementary knowledge of sanitation was possessed by all stock-owners, but it is a branch of their education

which seems to have been woefully neglected, or some of them have not taken advantage of the opportunities afforded to them of becoming acquainted with its details. In this age of economical science, everything is sacrificed to gain, and sanitary laws are sometimes set at naught in order that one product of the farm shall be rendered as valuable as possible, even though it may be at the expense of the health and comfort of the animals which are made to contribute to this enhanced gain. I refer to the system which has recently sprung up of "feeding animals upon dunghills under cover." In the experience of the past, all feeding and breeding establishments had their wintering sheds supplied with outer courts. In the sheds themselves the animals were supposed to obtain a comfortable and dry bed, free from the effluvia and moisture of the dunghill; while in the latter they obtained the amount of exercise necessary to keep them in health, and at the same time were the means of preparing a large quantity of valuable manure for use on the farm. Now, the idea, in some districts, seems to be to feed them and house them night and day under the same roof, allowing their liquid and solid excreta and all waste feeding material to accumulate in one seething heap, reeking of all the vile odours that can possibly be manufactured, and steeped from its foundation to its surface with liquid filth.

This description may seem an exaggeration to some who have not witnessed it, but it is within the truth. I have within the present year, in this country, seen one of the finest cattle sheds a man could wish erected, with from two to nearly four feet of semi-solid manure, saturated with urine and in a vile state of decomposition, accumulated on its floor, and the liquid filth collecting in holes made for the purpose here and there over its area; while around its outer sides the same material was quietly oozing out and flowing unchecked over the gangways, and even into the adjacent byres. I have seen cows standing with their blood at such a fever heat as to send the temperature up to 103-4° F.; and young stock confined in a place which could only have been beaten for its insanitary condition by the black hole of Calcutta, with every possible inlet and outlet of air, and very nearly all light, blocked out, and the urine of the animals allowed to accumulate in one corner of the vile prison.

I have again seen animals confined in a place in which the liquid filth was allowed to collect in a kind of cesspool, and from this the imprisoned animals quenched their thirst, with the result that many of them succumbed to blood-poisoning; and lastly, I have seen in what is sometimes called "enlightened England," a feeding shed arranged with the midden in the centre, and the animals standing, tied up, in rows around it, and that, too, on the home farm of a landed proprietor. Such things seem almost incredible in this nineteenth century, when we think that our forefathers knew so much of sanitary science as to lead them to see the necessity of providing even their pig-styes with an inner and outer compartment.

In reference to the food supply of our domestic animals, do we not find that in many instances breeders of stock are utterly ignorant as to the physiological wants of the creatures upon which they are so largely dependent for their own well-being? I grant that very often the feeder is not to blame; he provides food such as he has been led to expect is suited to the purpose to which he applies it, but he does not consider the digestive or assimilative capabilities of the animals placed under his care, and in this way he often meets with serious and unexpected losses. And more than this, the tendency has grown of late years of purchasing very large quantities of what we may call prepared foods, *i.e.*, cakes and meals and other kinds of manufactured feeding stuffs. These are in themselves splendid material for feeding purposes, but how often are they made the channels by which

inferior stuffs are got rid of at superior prices, to the detriment more frequently of the buyer than the seller.

Every day is the attention of those who are engaged in the investigation of the etiology of disease more particularly directed to the truth of what I have stated. Cattle are found dying after having partaken of a feed of a particular kind of cheap meal or of cheap cake, and on examination these are found to be mixed with different kinds of deleterious matter, in a state of chemical change, or swarming with countless millions of bacteria. Surely it were better that farmers should devote their attention more largely to this subject than they have done, and not take everything they are told by interested parties as gospel. I do not wish, nor do I intend, by these remarks to injure sellers of such material, for I am perfectly well aware that in very many cases they are totally ignorant of the fact that the wares they vend have anything of a deleterious nature about them, and that, figuratively speaking, "there is death in the *mess of pottage* they have prepared." But when such things are frequently brought to light, it behoves both sellers and buyers to be on their guard.

The last division of sanitation I wish to touch upon to-day is our "food supply." Gentlemen, I should have been pleased had I been in a position to say to you on this occasion that the representations which have been made and the labour which has been spent, in our endeavours to put this matter on a more satisfactory footing than it has hitherto occupied had been successful, but I have still to say that it stands pretty much where it was when I last addressed you on this subject. Certainly one step in advance has been gained, inasmuch as probably one of the largest veterinary gatherings which ever met in this country (the meeting of the British National Veterinary Medical Association, held in Manchester in August) adopted certain resolutions, which I had the pleasure and privilege to propose, tending to place this subject in its proper position, and to authoritatively show to those who have legislation on such subject in their hands, the steps that ought to be taken for the protection of our poorer brethren from the evil effects of unwholesome and injurious food. As matters are now, vile traffickers in a vile traffic are privileged to carry on their disgusting, and often death-dealing, trade with impunity, and to gloat over their ill-gotten gains to their heart's content.

Of equal importance with the foregoing is the subject of "humanity to animals," and I will preface the remarks I have to make under this head by observing that the veterinary surgeon is nothing if he is not "humanitarian." His daily life, his hourly warfare, is with suffering, and he would be a brute indeed if he did not yield to the softening influence exerted by the continual contemplation of pain, which he is ofttimes powerless to relieve, and if such suffering did not give him a more extended sympathy with the helpless brute creation.

There are certain kinds of interference with the conscience and freedom of action of professional men which must be strenuously opposed, and feeling, as I do, that much unnecessary suffering is caused to animals by the performance of needless operations, I must nevertheless confess that it is painful and annoying to see men stand up in a public meeting as the defenders of the animal world, and impute sordid and mercenary motives to those whose whole life is, as a rule, one of self-abnegation. I refer here to the charges made against our profession in connection with the subject of docking, at the meeting in Manchester to which I have before referred. I could not help regretting at the time—I regret it equally now—that a feeling of antagonism should have been stirred up between a most useful and most benevolent society and our profession, by the ill-timed and ill-judged observations of those who were supposed to represent the views of the

former; and I sincerely hope that it will never again be my lot to witness the repetition of such a painful scene.

It is not my intention to refer further to the matter of "docking horses." I have already expressed myself publicly on this subject; but I must take this opportunity of considering, though it may be briefly, another and equally important subject, viz., the "over-stocking of the udders of cows."

This is a matter upon which, one would think, there ought to be no difference of opinion amongst professional men; and while I am prepared to allow that every man has a right to his own opinion in all things, I must at the same time declare that I cannot understand how an educated veterinary surgeon, with a knowledge of physiology, and a knowledge of the laws which control and guide the faculty of sensation, can be found to defend such an unwarrantable practice, and even to refer to nature herself for a warrant for such practices. But so it is, and very specious are the arguments used, as they always may be used, in defence of the cruelty. The question is, in the first place, asked in our professional journals, by one of the defenders of over-stocking, What about nature? How do these animals get relief who are unfortunate enough to lose their offspring immediately they are born into the world? I admit that the question is a specious one, but I do not admit that nature's cruelties to animals in a state of nature are, in any sense of the word, a warrant for our cruelties to animals in a state of domestication. It is argued that nature relieves herself by the pressure of the milk upon the distended teats, leading to relaxation of their sphincters, and thus providing an outflow for the retained milk, and relief for the overcharged gland; but is this always the case? What percentage of animals would there be that would not gain relief in this way? Let the records of the daily practice of those who are engaged in the treatment of animals in town dairies give the answer. Why do we meet with so many cases of Mammitis in this city? and to what is it attributable? Largely, I answer, to the absurd, injurious, and cruel system of over-stocking, which is so frequently practised by the sellers. But, it may be rightly asked, has the buyer nothing to do with this? The answer is an affirmative one, for if buyers of over-stocked animals were not forthcoming it would not be worth the while of sellers to practise the system. A second argument is made use of, to the effect that there is no pain in overstocking. Such an assertion to me savours of a melancholy ignorance of the structure and function of secerning glands in general. The udder is an organ of highly complex conformation, provided extensively with sensory nerves, and of great vascularity. Its acini are so intimately connected with each other that it is almost impossible that relief should be gained in the usual way, *i.e.*, by swelling, when it becomes the subject of active hyperæmia or of inflammation; consequently, whenever the outflow of milk is prevented, pressure is exerted upon the acini and upon the blood-vessels; tension follows, and after this, pressure upon the terminal ends of the sensory nerves, with the natural result, acute suffering. This latter is shown by the stiff, straddling, and sore gait of the victims of man's cupidity; by the ofttimes quickened pulse, the heightened temperature, and the unwillingness to move, observed in such cases. Some years ago I was called upon to examine a flock of blackfaced ewes, of whose number between sixty and seventy had been brutally mutilated by some unknown miscreant, by the removal, wholly or partially, of their teats; and as the wounds caused thereby became healed, the outflow of milk was effectually prevented, and at lambing time (the lambs not being able to draw off the milk) the poor animals were found wandering mopishly and miserably about the field, careless of their offspring, refusing to feed, and grinding their teeth in a most heartrending fashion. Was there no pain here? and, if not, whence the suffering? But it may be

said, Ah ! here you had the outlet for the flow of milk hermetically sealed ! Granted all this, and giving the benefit of the doubt, to as great an extent as is possible, to the distended udder with unsealed teats, I have no hesitation in asserting that, even when the milk flows naturally and freely away, even then, I say, pain is produced. Unfortunately, the poor cow cannot speak ; but all females are not in that defenceless position, and we can fortunately get indubitable evidence, by analogy, of the great pain which is caused, even when the sphincters of the teats are relaxed, by allowing the mammary gland to become distended beyond its natural capacity, and we can even gain valuable confirmatory evidence on this point from the effects produced by the over-distension of distensile organs in our own bodies ; and the heaviest punishment I would wish to see inflicted either upon overstockers or upon those who defend the practice would be that they should be placed in the position of the over-stocked cow for a period of twenty-four or thirty-six hours.

Another remarkable piece of evidence in favour of over-stocking, or rather in defence of the operation, is sought to be drawn from the natural process of drying of the udder when cows are turned off milking for the purpose of fattening. It is stated that the natural result of allowing the milk to accumulate in the udder is the suppression of its secretion by the pressure exerted on the gland cells. Doubtless this is so, but does it not occur to the mind of any one using such an argument that it has two edges, and that the very fact of this suppression, following the accumulation of milk, is an argument of the strongest nature against the system of over-stocking ? and that in proportion as the glandular function is interfered with by over-stocking will be the loss to the purchaser of such animals ? Gentlemen, I have one hope, and that is, that no pupil of mine will ever be found defending in a court of justice an absolutely indefensible and highly reprehensible practice ; or, by defending it, indirectly encouraging the unscrupulous trader to resort to mechanical means (such as the insertion of rice into the teats or the application of elastic bands) of arresting the outflow of milk from the udders of the unfortunate victims of his cupidity.

In conclusion, I would urge upon you the necessity of using your best endeavours to make yourselves acquainted with all the bearings of medical and surgical pathology ; of looking (*not glancing*) carefully into the nature of every diseased process which may come under observation, and of investigating for yourselves every case and every specimen of an interesting nature that may be brought to your notice, either here or elsewhere. Depend upon it, that your future success in life will be in exact proportion to the use you make, in your student days, of the faculties with which nature or nature's God has endowed you ; and that in like proportion will these faculties fail if you allow the rust of indolence to accmulate about them, or the friction of indulgence to wear them prematurely away.

THE BACILLUS OF MALLEUS HUMIDUS, OR GLANDERS.

SCHUTZ and Löffler have proved the existence of this bacillus, which is similar to that found in tubercle, but differs from it in possessing a specific tincturing power. Several days afterwards Bouchard in Paris, too, described micro-organisms as the cause of *Malleus humidus*. These micro-organisms were said to be roundish, somewhat elongated formations, cocci, which are constantly in lively movement in the liquor, and finally group themselves in the form of chaplets. These researches were made solely with animals affected with Glanders. Several days since a female rag-picker was conveyed to the Vienna Hospital Rüdolfsstiftung. On her face and body were pustules somewhat larger than Variola pustules, besides nodules in the skin and in the

subcutaneous tissue, from which matter oozed. *Malleus humidus* was diagnosed, and Dr. Weichselbaüm found in the matter from the pustules, as well as in the discharge from the nose, in the blood, and in the urine of the patient, the same bacilli as Schütz and Löffler had described. Weichselbaüm tried, with complete success, pure cultures of this bacillus on flesh-pepton-gelatine, on flesh-pepton, agar-agar, and on potatoes. The cultures grow slowly at ordinary temperatures, but very quickly at the temperature of the blood. On sterile potatoes the bacillus forms, first, light-brown, and then dark-brown, colonies. Even the formation of "Sporen" could be remarked; and, finally, little rods ("Stäbchen") were seen, which dissolved and resembled cocci grouping together. All inoculations with the latter cultures into rabbits, sea-hogs, sheep, etc., produced *Malleus humidus*. Consequently, Dr. Weichselbaüm is of opinion that these bacilli are those of that disease. As to the micro-organisms of Bouchard, he points out that the French inquirer employed broth for his cultures, and doubtless made his inoculations with polluted material. Professor Csokor, of the Vienna Veterinary Institute, lecturing on the 9th December on Glanders and on Tubercular Consumption of Horses, referred to these researches. As to the bacillus, he said he was not in a position to agree entirely with Schütz's statements. He did not find any specific quality in Schütz's bacillus. That it forms "Sporen" is not surprising, as all bacilli which multiply according to the leptothrix form do so. If all error is to be excluded, the researches must be made when the object is still fresh or mixed with glycerine, or with magdala-red, nor must it have been heated or dried previously.

A NEW SEPTIC ORGANISM.

THE anniversary meeting of the Royal Microscopical Society, on February 11th, was rendered unusually interesting owing to its having been selected by the President, the Rev. Dr. Dallinger, as the occasion for describing the life-history of another of those marvellous organisms known as monads, which divide with bacteria the duty of feeding on and breaking up putrescent matter of animal or vegetable origin. Dr. Dallinger has for nearly twenty years been assiduously studying, in association with Dr. Drysdale, of Liverpool, and alone, the lowest forms of life, with the highest powers and most varied appliances of microscopic research; and, being possessed of a tolerance of continuous observation which has never been surpassed, he has, when opportunity arose, followed for days in succession the organisms whose history he wished to trace, and which had eluded all other methods of investigation. On some occasions the two observers, continuously replacing one another, have never taken their eyes off the objects under view for from eight to sixteen days consecutively; and their patience has been rewarded by a completeness of success and a solidity of addition to knowledge which equal the best German achievements in science. The complete life-history of eight monads, about which next to nothing was previously known, have been now laid before the Royal and the Microscopical Societies; and, in addition to striking improvements in methods and apparatus of research, Dr. Dallinger has demonstrated, not only the varied modes of fission by which, every two or three minutes, these creatures double their numbers in the effort to cope with the quantities of decaying matter on which they thrive, but also the existence of a true sexual mode of multiplication, resulting in the production of a multitudinous crop of incredibly minute spores, only barely visible with a magnifying power of 5,000 diameters. These spores have been found to be indestructible by even a boiling heat in some cases, and have accounted for very much of what used to be known as spontaneous generation; and their steady growth into the likeness of their parent forms

has been witnessed again and again until the ordinary, non-sexual mode of multiplication by fission was re-established.

Dr. Dallinger has found comparatively high infusorians, such as paramecium, capable of thriving in a medium containing merely inorganic salts and tartrate of ammonium, which fact alone upsets a cherished definition of the difference between animals and plants. Commencing his address on Wednesday night with a review of the position of bacteria and monads in biology, Dr. Dallinger went on to remark that whoever had studied the same field of septic bacteria for a week or a fortnight without change of conditions would know the strange complexity of relations that are seen to arise, and until this complexity of relations in common forms was understood assured progress was impossible. How the bacteria are inter-related, how far they are mutable and under what conditions, and whether functional changes are as readily, or more readily, induced than morphological changes visibly perceptible, were questions of the highest moment awaiting solution. The forms which give rise to specific diseases were now being vigorously and almost exclusively studied, to the detriment of investigation into forms not connected with disease, from which, however, they must have arisen at some past time. The discovery alleged to have been made by Hans Büchner, in 1880, of the convertibility of the bacillus of the terrible disease Anthrax, or Splenic Fever of cattle, into the innocuous bacillus subtilis which it outwardly resembles, and the converse, appears so startling to even a Darwinian, that there must be error somewhere; for if the law of actual variation, with all that is involved in survival of the fittest, could be so readily brought into complete operation, and yield so pronounced a result, where would be the stability of the organic world? There could be no permanence in anything living. Dr. Dallinger agreed with Dr. Klein in considering Büchner's so-called results utterly improbable. It was of the utmost importance, however, to discover the true relations between such organisms, and the effect of changed conditions. Whether the changes produced by Pasteur in his attenuated virus were true biological changes or a mere physical and accompanying chemical attenuation consequent on enfeebled nutrition, or extended dilution of some element of the virus, and consequently not involving permanent change, was still unsettled; but Dr. Dallinger inclined to the latter view.

The new organism referred to above first came under notice about four years ago in an exhausted maceration of cod-fish, which had decomposed in a broth extracted from the boiling of rabbits, long kept at a temperature of 90 deg. to 95 deg. Fahr. By a complex and ingenious arrangement, not only was the drop of fluid under examination, but also the vapour surrounding it, kept at a necessary constant temperature not varying more than $\frac{1}{10}$ of a degree Fahrenheit, and thus its form and movements were fully ascertained. The sub-oval body, lens-shaped, destitute of internal organs, measured about $\frac{1}{10000}$ of an inch in length, by $\frac{1}{19000}$ of an inch in breadth; but it had no fewer than six long, thread-like flagella, or motile organs, like whip-lashes, each three times as long as the body. One very remarkable mode of locomotion resulting was comparable only to wave-like leaps, reminding the observer of the movements of a shoal of porpoises. The organism was never attached, but by a free darting down upon and away from minute particles of decomposing matter by large numbers, the matter was in half-an-hour visibly reduced in size. "No sight accessible to the human eye," said Dr. Dallinger, "can be more fascinating or more beautiful than this. A field of 50, or even 100, may be observed with ease, pursuing their untiring work. It is the more entrancing that it is apparently rhythmic, not like the measured march of a regiment, but the rhythmic movement of a peal of bells." The analysis of this movement and its results was most

difficult, because of the incessant change of position of the organisms. The mode of ordinary multiplication by fission also presented features of great interest, owing to the problem of the formation of the new and numerous flagella. For a long period it was found impossible to observe any sexual form of multiplication; but unwearied diligence at last succeeded after three years' work. A kind of fusion of two individuals occurred, one of the individuals gradually contracting its flagella, losing its characteristic shape, and becoming ultimately absorbed in the other, which all the while, strange to say, continued swimming with full vigour. After complete union had taken place, the movement was much slower, and the body broke up rapidly into very minute portions in the course of from four to five hours, the motion of the whole organism being still active. Then, as it swam, it was seen to be dropping from it a stream of granules, the spores (and these being continuously watched) were seen to grow up into the likeness of the parent form, and shortly after to multiply by the old process of fission. Thus, should drying of the fluid take place, a multitudinous supply of the minutest germs, able to resist high temperatures, would become disseminated in the atmosphere, each capable of reproducing the whole series of changes. We have not space to follow Dr. Dallinger's exhaustive account of the variety of modes of fission he has observed in these minute organisms, but we have said enough to show that in his competent hands England will more than hold its own in researches on the minutest organisms—those most difficult to observe, most important in their operations, most essential to our health, or most pregnant with disease.

REPORT OF THE COMMITTEE APPOINTED TO WAIT ON THE VETERINARY COMMITTEE OF THE ROYAL AGRICULTURAL SOCIETY.

[We have been requested to publish the following report, read at the last Council Meeting of the Royal College of Veterinary Surgeons.]

YOUR Committee have to report that on the 4th November last they met the Veterinary Committee of the Royal Agricultural Society at the Society's rooms in Hanover Square. Present—Messrs. Greaves, Dray, Wragg, H. L. Simpson, and the Secretary.

In the unavoidable absence of the President of the College, Mr. Simpson was requested by him to explain the views of the Council in reference to Professor Brown's pamphlet, and the proposed appointment by the Royal Agricultural Society of one veterinary surgeon in each county who, amongst other duties, would supply to farmers the medicines and drugs recommended in the pamphlet. It was pointed out that Professor Brown advocated a system by which veterinary surgeons make visits and advise on the prevention of disease as well as attend the stock in illness; and this, known as the contract system, is one which has the entire approval of your Committee, who know that it is largely in operation. But your Committee disagree with the conclusion at which Professor Brown arrives, namely, that the country districts are so badly supplied with veterinary surgeons that veterinary aid cannot be procured, and that it is vain to hope that farmers in general will avail themselves of the constant aid of the veterinary surgeon. Your Committee urged that the aim of the Royal Agricultural Society should be to encourage the contract system as the best in the interest of the public and the profession to put down quackery, and they further urged that the country districts were well supplied with veterinary surgeons able and willing within their districts to carry out this system, and that the appointment by the Society of one veterinary surgeon for the whole of each county for such a purpose would be very detrimental to local veterinary surgeons, without any

corresponding benefit to farmers. With regard to the publication of that part of Professor Brown's pamphlet entitled, "The Medicine Chest for the Farm," your Committee urged that the publication in a popular paper of a recommendation that such deadly poisons as Fleming's tincture of aconite and extract of belladonna should be kept at hand and used by farmers or their men according to directions there given, was injurious in every way, and that, inasmuch as the whole of the recommendations in the "Medicine Chest," were framed on the supposition that veterinary aid and veterinary medicines were not readily procurable, your Committee hoped the Royal Agricultural Society would neither press the publication of Professor Brown's pamphlet nor the appointment of a veterinary surgeon to each county to supply the medicines and drugs. Your Committee believe they have represented the views of all country practitioners who have considered this important subject, and they sincerely trust their representations will have the desired effect.

January 5th, 1885.

Proceedings of Veterinary Medical Societies, &c.

ROYAL COUNTIES VETERINARY MEDICAL ASSOCIATION.

(*Continued from page* 129.)

I can hardly think that the decrease has continued in anything like the same proportion up to the *present* year, or our condition would indeed be alarming. It may be said, this last statement applies only to England, and that it is to *Ireland* we look for so much help in the matter of horses. Well, gentlemen, while admitting that to be true, I will show you the condition of Ireland as regards numbers of horses. In spite of a slight increase in the number bred in that country in 1872 as against 1871, the returns show that in 1859 there were 88,330 horses more in that country than in 1872, and in 1862 there were 62,149 more horses there than in 1872. I have had opportunities of conversing with gentlemen who are intimately acquainted with this subject, and in *their* opinion, as well as my own, this scarcity of horses in the United Kingdom is mainly referable to the exportation of our mares to foreign countries, whereby breeding has fallen off to an alarming extent. There are, doubtless, other causes; thus, the profits arising from the rearing of sheep and cattle, from being more certain, induce the farmer to give a preference to this occupation. If more evidence were required to convince you that the scarcity of horses *does* exist, not only in the hunter, hack, and superior harness-horse classes, but also in the cavalry, artillery, and half-bred horse generally, I may refer you to the answers to inquiries given by Mr. Phillips, who has possibly bought more horses for the English army than any man living, and whose opinion therefore cannot be lightly set aside. His replies may be shortly summarised as follows:—"I agree that there is a great scarcity of horses in this country. I attribute it to the loss of our mares, which go abroad. These mares are taken away because the foreigners consider our breed the best in the world. If I were called upon to provide 2,000 or 3,000 army horses within two or three months, I should be put to my wits' end to do it. I bought all the horses for the last Autumn Manœuvres, and if I had been restricted to English horses I should have broken down. My contract was for 2,000 horses; of these 1,500 were foreigners." Now, gentlemen, this is the evidence of a buyer who possibly has agents in every district throughout the country, and who could collect army horses more readily than any Englishman. It is here that I would again ask you to compare this statement with that of the Prussian cavalry officer, who said: "Regiments in Prussia could be completed on the third

day after mobilization." I do not propose to further refer to the scarcity of hunters (really hunters) and other high-class horses, as they come more immediately under our care as civil veterinary surgeons, and if I appeal to your knowledge of the difficulties there are in obtaining these animals simply, it will answer every purpose, as I have little doubt your experience of the scarcity of these classes agrees with my own. So far as the thoroughbred horse is concerned, there are more I believe in existence at the present day than ever, and, as I have before said, so long as the racecourse possesses the same attraction for the British public as it does in the present day, private enterprise may be left to care for them, both as regards their number and quality. I should, however, like to refer you to a summary of what Mr. Church, the manager of the General Omnibus Company, has said with regard to the class of horse with which he is more immediately concerned :—"We were driven to buy foreign horses simply because we could not get English. It was *not* because they were *cheaper*. In proof of which, the average price paid for our horses in 1862 was £25 2s. 7d., whereas *now* the average price is £33 19s. 10d. Of the 2,370 horses owned by the company in 1872, 90 per cent. were foreigners. The only remedy that I have ever heard of is that encouragement should be given to farmers to breed horses."

Doubtless some will refer me to the large increase in the number of horse repositories, and the increase in the number of horses which are sent there, and argue from these facts that there cannot be a scarcity of horses in the country. My answer to that is, the practice of disposing of horses by auction at repositories is becoming more and more popular, inasmuch as it relieves the seller of a large amount of responsibility which used to attach to him while selling horses to his friends or dealers at home. I am now, of course, referring to the private seller, but preference for this manner of disposing of horses is not confined to the private owner of a stud of hunters, or the executors of the gentleman deceased, as in and around London within the last few years it has become the practice for the large horse-dealers to employ a proprietor of a horse repository to call periodical sales, at which from twenty to fifty horses are disposed of in one day, so that the increase in the number of horses sold by auction is referable to a preference for this means of disposal, and not, in my opinion, to a large increase in the number of useful horses in this country.

We will now consider, briefly, whether it is a fact that horses are dearer than they were some few years ago, and I purposely pass at once to the consideration of this point, because it is necessary to trouble you again with figures, and I prefer to rely upon statistics on a point of this kind rather than to be guided by the mere opinions of gentlemen and others, because a scarcity of horses in their own immediate neighbourhood, and a consequent advance in price may induce them to say, without actual proof, that the state of affairs belonging to their own district must necessarily apply to the whole of the country. If I give the experience of those proprietors and others who respectively have to deal with the different classes of horses, we shall see whether the increase in price applies to one class more than another.

As to Carriage Horses.

Mr. Joshua East, of the well-known firm of East and Co. (who are probably the largest jobmasters in England) found that horses began to get dearer in 1862, and that the price increased year by year, until in 1872 he was paying 30 per cent. more for his young horses than in 1862 (ten years previously). Col. Maude, who purchases all the horses for the Queen's use, says that he did not find it necessary to pay more for the horses in 1872 than he had done for some time previous, but that instead of buying them

as heretofore at four years old, he was obliged to secure them at three years old, but at the original price, and keep them for a year before working them, so that the cost of the keep of each horse for a year may be considered to represent the advance in the price. I take it that if all the expenses are taken into consideration, £25 would represent the difference in value of the animal at four years as compared with his value at three years old.

As to Hunters, Hacks, etc.

Messrs. Tattersall show a table of comparative prices, dividing the animals sold by them into two classes, which may be described respectively as "superior" and "medium":—From the year 1864 there was a steady but marked advance in price at their establishment year by year, and the table I have referred to shows that, whereas in 1864 the average price of superior horses sold by them was £40 19s., in 1872 it had advanced to £90, or an increase of about 120 per cent. With regard to the "medium" class, in 1864 the average price was £21 11s. and in 1872 it was £36 10s., or an advance of about 70 per cent.

As to Army Horses.

Officers when being examined before the Committee in 1873, appeared to me, from the evidence they gave, to be desirous of taking a hopeful view of matters, as several of them stated that they had not experienced a scarcity, but their evidence went to show that if the old number of army horses was then maintained, they had to pay more for their remounts; thus Lieut.-Gen. Storks said: "I could find horses for an emergency *if I went with any quantity of money in my pocket*, but I could not find them at the *regulation price*, and I think it would take some time to do it. The increase in the price of the cavalry and artillery horse might have been ascertained by me up to the present day, and I regret that I have omitted to obtain this information. As, however, we have army veterinary surgeons with us to-day, they will, doubtless, set me right if I am in error in stating that, within twenty years, it has been necessary to increase the regulation price for horses for these services from £30 to £45. I specially mention the word 'regulation,' as I have been informed that this price does not actually represent the amount *paid* for remounts, as in many cavalry regiments a colonel will often himself pay the difference between the price *asked* for the horse and the regulation price, rather than lose a good remount for his regiment, which one can hardly hope to obtain for £45."

As to the Van and Trotting Horse.

I do not think I can do better than again refer you to the experience of the General Omnibus Company, who, in 1872, were paying an average of £32 17s. 8d. per horse, and *not English* horses, remember; whereas, in 1868, the average cost per horse was £23 5s. 10d., or an advance of £8 11s. 10d. in four years. This class of horse may be considered to belong partly to the artillery class, with which I have already dealt.

As to Cart Horses.

The experience of the South-Western Railway Company was as follows:—In 1868 the average cost per horse was £36 10s., and in 1872 £50, or an advance of £13 10s. per horse in four years.

The Great Northern Railway found their horses cost, upon an average, £35 in 1868, and £48 in 1872, showing an advance in price for the four years of £13 per horse.

As to Aged and Infirm Horses, or Cart Horses, of all Descriptions.

This class of animal appears to have advanced in price, in some cases, far out of proportion to that of young and serviceable horses. Thus Messrs. East found that in 1872 they were obtaining more money by 40 per cent. for their cart horses than they obtained in 1862, while the Great Northern Railway, who, in 1868, realised an average of £10 per cart horse, were in 1872 (four years later) enabled to sell the same description of animal in the open market for £23 11s., showing an advance of £13 11s. per horse in that period.

Having, I think, dealt with all classes of animals under the head of "Increase in Price," I will refer to depreciation in quality and increasing unsoundness under one head; and upon these points I propose to say but little, as I have the advantage of reading this paper before a body of gentlemen, whose opinions as to whether these two disadvantages exist or not is superior to that of any ordinary horseman, however great his experience may be, either as a breeder of horses, a master of hounds, or a horse-dealer.

If any are in doubt as to whether there is an increase in the number of unsound horses, that doubt may be set at rest if they will compare the copies of their certificates of the last few years with those of twenty years ago. It may be to my advantage, or possibly the reverse, that I am unable to do that myself; but those who have had a long and varied experience will, I am sure, agree with me that, where the certificate of twenty years ago was, as a rule, one containing only a few lines, stating that a horse had been examined, and that, in their opinion, it was sound, it is now necessary to make many qualifying remarks, or in many instances to condemn the animal as absolutely unsound. At any rate, my experience has shown me that it is the exception, rather than the rule, to be able to give a clean certificate of the horses I am sent to examine. The experience which enables you to pronounce an opinion upon the unsoundness of horses, compared with some few years back, qualifies you to speak upon the other point, namely, the depreciation in quality of horses, and as, doubtless, this is a part of the subject which will be well discussed, I will say no more about it now.

If the Government of this country decided to interest itself in this question of horse-breeding, it occurs to me that the system adopted in India (with some slight alteration) might very well be copied.

I think no stallions but those who have been certified to be free from hereditary disease should be purchased, and no mare should be allowed to have the services of these horses, unless her owner could also produce a certificate to the same effect.

Two classes of stallions would probably be provided for certain districts, as in India, and the owner of the mare, with the assistance of the person in charge of the stallion, could select the horse best suited to his mare.

No fee should be charged for the services of the stallions, except in those instances where the services were required for a thoroughbred mare. I can foresee that this would be necessary, or a horse whose produce was popular on the turf would be called into requisition to cover these thoroughbred mares, with a view to racing the produce. This would exclude from his services the class of mare that would produce stock beneficial to the country and with profit to the owner, and on that account breeding thoroughbreds from public stallions should not be encouraged.

From the fact that so many of our best mares have gone out of the country, I should not hope for great results, until the produce obtained in this way had attained the age of three years, when, doubtless their superiority over the class which farmers had, for years past, been breeding, would be evident, and after that I should not be at all surprised if farmers and others

bought good half-bred mares as they would a good cart mare, with the main object of obtaining a few foals from them. On all sides it is admitted that the travelling stallion of the present day is a failure, and the speedy thoroughbred is not so much sought after on account of his qualifications as a hunter-getting sire, but simply because he has won so many important races. I am, of course, aware that the horse which looks most competent to get hunters with good looks and plenty of bone and muscle, frequently gets stock the reverse of this. In such a case, I would say, castrate and sell him rather than allow him to beget stock which is of no use to the country; this would but be doing what I am told is done in Germany.

Prizes should be given at every agricultural show in the kingdom for the best brood mares and young stock up to three years old.

The stallions of a private individual should not be allowed to cover unless he possessed the certificate of a Government inspector, stating that he was free from hereditary disease, but if he possessed this certificate he should be encouraged in every possible way. Thus, if he covered, say, fifty mares annually, at a low price compared with his value, his owner should be subsidised in some way, thus imitating the plan adopted by the Austrian Government, who, as I have told you, give amounts of from £10 to £30 annually to all such stallions.

The reason given by the House of Lords Committee for not recommending that the Government should possess stallions of their own, was that the Government would, if such a plan were adopted, place itself in the invidious position of competing with private owners of stallions, and that compulsory examination would be regarded as an undue interference with the liberty of the subject.

I can hardly think that such considerations as these influence the Government of our time; otherwise it is difficult to conceive why the interests of the small country parcel-carriers, as well as the larger business of carrying companies, were not first considered before the parcels-post was allowed to be introduced. If, however, a committee of inquiry decided that the business of private owners of stallions would be interfered with, I can understand that nothing would be easier than dealing with such a state of things by the buying up of these animals, retaining those which were good enough, and castrating all the unsound brutes, which are ruining the country, as regards horses, by their existence as stallions.

There are, however, so many details requiring to be dealt with in attempting to lay out a scheme which would be likely to be attended with success, and which if I attempted to go into to-day would I fear weary you. They are present in my mind, but it would occupy in fact more time than it would be fair of me to expect you to grant me. I will, therefore, now conclude my remarks by renewing the hope expressed in the early part of my Paper, namely, that you have not thought this subject undeserving the consideration of a scientific association.

An animated discussion subsequently took place, in which Messrs. Lepper, Drewe, Walker (Oxford), Walker (1st Life Guards), Professor Pritchard, and others took part. Mr. Lepper proposed, and Mr. Drewe seconded a vote of thanks to Mr. Simpson, who was complimented on the subject he had chosen.

On the motion of Mr. Simpson, seconded by Mr. Simpson (Windsor,) it was unanimously agreed that a cordial vote of thanks be given to Mr. Lepper, for the way in which he had presided over the first year's meetings of the Association.

The next meeting will be held on the last Friday in February, at Reading.

H. KIDD, *Hon. Sec.*

BORDER COUNTIES VETERINARY MEDICAL SOCIETY.

THE third general meeting of this Society was held at the Bush Hotel, Carlisle, on October 3rd; Mr. J. Carlisle, the President, in the chair.

Members present:—Roberts, Kendal; Little, Abbey Town; Walker, Kirkby Lonsdale; Harrison, Warcop; Thompson, Aspatria; T. and J. G. Bell, Carlisle; Chalmers, Longtown; Robson, Penrith; Crowdace, Haltwhistle; Dawson, Carlisle; Armstrong, student, Penrith; and the Secretary.

Apologies were received from Soulsby, Whitehaven; Young, Cockermouth; Pears, Langholm; A. W. Lawson, Keswick; Howe, Keswick; A. J. McIntosh, Dumfries; Mr. Greaves, Manchester; Professors McCall and Walley.

The minutes of the previous meeting having been read and approved, the following gentlemen were unanimously elected members:—John Bell, Clonmel, and Jacob Howe, Keswick. Mr. Harrison, Buxtergill, Warcop; Mr. Aaron Sisson, Gosforth; and Mr. J. S. Walker, Kirkby Lonsdale, were nominated for membership.

The office-bearers nominated for the ensuing year were the President, Treasurer, and Secretary for re-election; Messrs. Roberts, Kendal; J. Pears, Penrith; T. Coates, Brampton; and A. J. McIntosh, Dumfries, as Vice-Presidents.

Mr. DAWSON then brought forward the following motion, notice of which had been given at a previous meeting. He proceeded as follows:—

Mr. President and Gentlemen,—The motion that the lay Press be excluded from our meetings, and that all reports *thereof emanate from the Secretary direct*, is one which, at first sight, might appear to place too much duty upon the secretary; but that can be easily obviated by procuring the services, when required, of a reporter. To me it appears necessary that our reports should be under the supervision of our own Secretary, not only for the public benefit, but for the members of this Society and the profession generally. The advantages of such procedure are at once quite apparent; the reports would be uniform, and the business of our meeting carefully looked over before being committed indiscriminately to the services of the Press; our writings and effusions, without any doubt, sometimes require modification before publicity is resorted to, not only through the medium of the newspapers, but also the veterinary periodicals, which is the orthodox channel through which our deliberations should be made public. The profession is best able to reduce the gist of our outspoken ideas to beneficial practice, consequently the general public through that source receive the greatest advantage. Publicity by all means is desirable, but a prudent care is necessary with it. Be it understood that in reference to this motion I have no feeling but one towards the gentlemen who have the honour to represent the lay Press, and that is, one of the most profound respect.

After some conversation the motion was adopted unanimously.

It was decided to call the attention of members to the following rule, and intimate that in future it will be enforced:—

Rule IV.—Any member not attending shall be subject to a fine of two shillings and sixpence, unless notice of such absence be given to the Secretary—such notice to be posted that day.

Mr. ROBERTS then read his essay on "Chloroform: Its Uses as an Anæsthetic in Veterinary Practice" (this paper appeared in the January issue of the VETERINARY JOURNAL), which was listened to with marked attention by the members present, and a very interesting and profitable discussion ensued, which partook mainly of a conversational character, all the members present taking part.

The resumed discussion on Mr. Thompson's paper read at the previous meeting was next proceeded with, and an animated discussion ensued.

Votes of thanks to the President and essayist brought the proceedings to a close, it being remarked that the meeting was the most interesting and profitable which the Society has held. The meeting lasted nearly six hours.

J. DONALD, *Secretary.*

LINCOLNSHIRE MEDICAL VETERINARY SOCIETY.

ANNUAL MEETING AT GRANTHAM.

THE second annual meeting of this Society was held at Grantham on Tuesday, January 6th. There was a very fair gathering of the members, and the proceedings proved exceedingly pleasant and successful. The great feature of the meeting was the attendance of Professor Walley, of Edinburgh, who read a most able paper in reference to special forms of Stomatitis in domestic animals, which gave rise to an interesting and useful discussion. Amongst those present we may mention Mr. J. Mackinder, of Peterborough (President of the Society); Professor Walley, of the Royal (Dick's) Veterinary College, Edinburgh; Captain Russell, Grantham; Messrs F. Spencer, Wragby (Secretary); Hardy, Sleaford; Runciman, Market Deeping; Greaves, Manchester; Brown, Navenby; Brooks, Fulbeck; Cooke, Lincoln; Leach, Boston; Kent, Boston; Gresswell, Peterborough; Whitworth, Grantham; B. Freer, Uppingham; C. Hartley, Lincoln; Gooch, Stamford; and Robinson, Peterborough.

The meeting was held at the Angel Hotel, Mr. MACKINDER occupying the chair by virtue of his official position.

The minutes of the previous meeting having been printed and circulated amongst the members, it was agreed, on the proposition of Captain RUSSELL, seconded by Mr. HARDY, that they be taken as read.

The CHAIRMAN said the next business was to consider the Treasurer's report, but a letter had been received from that gentleman, stating that he was unable to be present, as he had left the county; and his books not having reached the Secretary as yet, it would be necessary to postpone the financial part of the business until the next meeting.

The following gentlemen were then proposed for membership:—Mr. Cooke, Lincoln (proposed by Mr. HARDY, seconded by Mr. BROOKS); Mr. Leach, Boston (proposed by Mr. FRED SPENCER, seconded by Mr. BROOKS); Mr. Chas. Hartley, Lincoln (proposed by Captain RUSSELL, seconded by Mr. SPENCER); and Mr. B. Freer, Uppingham (proposed by Mr. GRESSWELL, seconded by Mr. SPENCER). These nominations were agreed to, and the gentlemen named declared duly elected.

The SECRETARY (Mr. Spencer) announced that letters of apology for inability to attend had been received from Principal Robertson, London; Dr. Fleming, London; Messrs. H. Howse, Lincoln; J. Hoole, Sleaford; T. E. Smith, Market Rasen; J. B. Gresswell, Louth; and A. H. Santy, Norwich.

Election of Officers.

On the proposition of Mr. RUNCIMAN, seconded by Mr. BROWN, Mr. Hardy of Sleaford, was unanimously elected President of the Society for the ensuing year.

For the office of Vice-President, Mr. Gresswell, of Peterborough, was proposed by Capt. RUSSELL, seconded by Mr. SPENCER, and elected *nem. con.*

On the motion of Mr. SPENCER, seconded by Mr. RUNCIMAN, it was also proposed to confer a similar honour upon Mr. Brown, of Navenby, but that gentleman asked permission of the meeting to withdraw from nomination;

and Captain Russell, of Grantham, was then unanimously appointed, on the proposition of Mr. GRESSWELL, seconded by Mr. BROOKS.

The office of Treasurer being vacant, Captain RUSSELL proposed the election of Mr. Spencer, of Wragby, remarking that he was sure they could not have a better man. He had filled the position of Secretary during the past year, and was intimately acquainted with the Society's affairs. This proposition was seconded by Mr. BROOKS, and cordially assented to.

A letter was read from the retiring Treasurer, tendering his resignation, and wishing the Society every success.

For the vacant secretaryship, Mr. SPENCER proposed the appointment of Mr. Hartley, of Lincoln, which Captain RUSSELL said he had great pleasure in seconding.

In acknowledging the compliment, Mr. Hartley said he did not fail to appreciate the honour which the members had conferred upon him; his knowledge of the working of associations such as this was only limited, but if by any means he could forward the interests of the Society he should be glad to do so. (Hear, hear.)

The Council of the Royal College of Veterinary Surgeons.

Mr. RUNCIMAN (Market Deeping) said he wished to call the attention of the members to the following resolution, of which Mr. Kidd had given notice at a meeting of the Royal Counties Veterinary Medical Association, held at Aylesbury on November 28th:—"That it is expedient for the welfare and encouragement of members of the Royal College of Veterinary Surgeons that they have free and unlimited choice in the selection of members of the profession to serve on the Council. The members of this Association therefore petition the President and members of Council to take the necessary steps to have clause 9 rescinded of the Supplementary Charter granted by Her Majesty the Queen on the 23rd day of August, 1876." The effect of this clause (Mr. Runciman explained) was to debar any man who was not a Fellow from admission to the Council. He was not going to say one word against the Fellows; he had no doubt they were very good fellows—(laughter)—but he held that there were men equally as good out of fellowship and in membership, and he could not see that the mere fact of a man becoming a Fellow endowed him with abilities superior to those he was in possession of before. He therefore thought this Society should adopt a similar line of action to that proposed by Mr. Kidd, and send a petition to the President and members of the Council on the subject. He regarded it as too selfish and exclusive that a few men should thus take upon themselves the whole control of veterinary matters in this country—the rank and file being altogether excluded. He would give notice of his intention to move at the next meeting a similar proposition to that he had now read, and he hoped the members of the Society would give him their support, for he simply took the matter up on the principle of fair play.

The CHAIRMAN asked what action they were to take in reference to the next election of Councilmen? He would like to see a member of that Society on the Council; and he would therefore propose that they take steps to combine with other societies in order to secure the return of Captain Russell as a member of the Council. He thought it was only right they should be represented; and seeing what was going on now in the veterinary profession, it was desirable that a country veterinary surgeon should represent the professional men of the provinces on the Council instead of London men.

Captain RUSSELL inquired if Mr. Greaves could name the gentlemen who were retiring from the Council this year. Under certain conditions

it might be desirable for them to take some steps in the matter; but if there were several good men coming out this year, it would be better to let matters remain as they were, and give their votes for those good men. He gathered from Mr. Runciman's remarks that he objected to the exclusive election of Fellows on the Council. As a Fellow himself, he could not help saying that it was well known, when that rule was drawn up, that after a certain period none but Fellows would be elected; and he could not help thinking that it showed a little jealousy when they heard an objection raised by members who had not chosen to qualify themselves for the position of Fellows, and so render themselves eligible for a seat on the Council. If these men would only come forward and qualify themselves for the position, they would be on a level with the other Fellows, so far as their eligibility for election was concerned.

Mr. RUNCIMAN replied that Captain Russell had misunderstood him. He was not in the least degree jealous of the Fellows; but he objected to the rule on the principle of fair play. The Fellows had no more right to take the reins into their own hands than any other men. He would not vote for Captain Russell unless he said that members had as good a right to act on the Council as the Fellows.

Captain RUSSELL said he agreed with the previous speaker to some extent; but he thought it was a pity this matter was not noticed when the rule was put forth. He foresaw that in the course of a few years the Fellows would be placed in an ambiguous position; but as no notice was taken at the time, it was a pity that they should throw dirt upon it now.

Mr. GRESSWELL thought that members did not know much about the Charter at the time.

Mr. GREAVES said in answer to the question who were the retiring members of the Council, he believed that their worthy guest of that day, Professor Walley, was one; Mr. Taylor, of Manchester, was another; and Mr. Blakeway, of Stourbridge, was also one. He had known Captain Russell for many years, and being a very popular man in this and neighbouring counties, he was sure they would all be very much pleased to see him on the Council. He had great pleasure in seconding their worthy President's proposition that Captain Russell should be the selected candidate for this county; and, with their permission, he would respectfully suggest that Professor Walley's name be added, and that they should run both these gentlemen together, and he had no doubt that other associations would heartily join them in this step. Professor Walley they could not do without. At the present moment he was at the head of the profession; and, next to Dr. Fleming, one of their best men. They must have him in; and he should be glad to see Captain Russell elected with him. With regard to the Fellows, every man who had a diploma was eligible, if he chose; he had to go through certain examinations, and they looked upon it that their most aspiring men would obtain this dignity. It was an honour which those who obtained it certainly deserved; and he thought they ought to be entitled to some privileges that other men who were too careless and too indifferent did not aspire to.

The CHAIRMAN had great pleasure in accepting Professor Walley's name in conjunction with that of Captain Russell; and remarked that if the latter was not elected a member of the Council they would no doubt have the pleasure of seeing him appointed a Vice-President.

Captain RUSSELL remarked that he would not refuse to serve, but he should be sorry to oppose better men.

The proposition was then put to the meeting, and carried unanimously.

Professor WALLEY thanked the meeting for this unexpected mark of good will. He believed the Midland Counties Association would be very happy

to work with them ; and he was quite sure that if they supported the nominees of the three Scottish associations, the Border Counties, and the North of England, these five associations would support them. With such a combination he thought they would have no difficulty in carrying their men.

The CHAIRMAN then requested Professor Walley to read his paper on "Special Forms of Stomatitis in the Domestic Animals, and the Abortive System of Treatment of Contagious Diseases having a Local Origin."

The PROFESSOR having first exhibited a case of instruments which he had brought with him—most of them knives of different kinds with universal handles—proceeded to read the following paper :—

SPECIAL FORMS OF STOMATITIS.

Mr. President and Gentlemen,—In choosing the subject announced for discussion to-day I had in view two things, viz., the selection of subjects likely to be of interest to the general practitioner, and the avoidance of anything like an exhaustive paper, for the preparation of which I have no time ; but I must express the hope that the few cursory remarks I shall address to you will be of some practical benefit. The special forms of Stomatitis to which I wish more particularly to draw your attention are, Contagious Pustular Stomatitis in the horse and so-called "Croup" in poultry ; incidentally, however, I shall touch on other forms of disease also.

The term "Contagious Pustular Stomatitis" has been used in a much wider sense than to signify the existence of a local (buccal) exanthem. It has been used synonymously with Equine Variola, and particularly so by Dr. Fleming and some Continental writers. Now, while I am not going to assert that its application in this manner is not warranted, I shall, in accordance with my experience, give good reasons for doubting the advisability of so applying it ; and I will ask one preliminary question, *i.e.*, Is it possible to have a form of Contagious Pustular Stomatitis independent of Variola ? or when arising, is it only one special phase of that disease ? I will confess at the outset my inability to imagine the possibility of a series of cases of any general infective eruptive disorder occurring in which the lesions are entirely localised in one particular site.

You are doubtless well aware that in Foot-and-Mouth Disease we frequently get pronounced localisation of the lesions in particular organs, *e.g.*, the mouth, the udder, or the feet ; but while this is so, it is a rare thing to find a series of cases in which such circumscribed localization is absolute ; there are, in other words, lesions more or less pronounced elsewhere than in the part particularly affected. Another preliminary remark I will ask your permission to make, and that is, that I was somewhat astonished to see in this month's *Veterinarian* a declaration by the editors to the effect that "they have never seen the disease, and that the so-called cases of Horse-Pox have proved on investigation to be Ecthema."

Such has not been my experience, as I have met with cases of typical Variola Equina both in England and Scotland, and the existence of such a malady is intimately associated with the history of V. Vaccina.

On the 31st March last I was asked to examine as to soundness a six-year-old cob which had been purchased from a veterinary surgeon a day or two previously. In the course of my examination I discovered the existence of a well-developed Pustular Stomatitis ; and on making inquiry of the purchaser and his groom, I learned that they were both entirely ignorant of the existence of the disease, though they acknowledged they had observed the animal "slavering" a little, and that he did not masticate his food as he should do. At the close of the examination I granted a certificate to the effect that the animal was unsound, and at the same time explained to the purchaser that the disease was of a highly-contagious nature, and that,

in all probability, the infection would spread to two other cobs which he told me had been standing in the same stable, and drinking out of the same bucket as the animal in question. The symptoms presented were :— The eruption in the mouth, slight salivation, a moderate degree of fever, the temperature never rising above 103° F., a slight laryngeal cough, and some tumefaction of the inter-maxillary lymphatic glands. The animal was lively, ate well, and, had it been required, could have performed an ordinary amount of work throughout the whole course of the malady.

On the 1st of April I was desired by the purchaser of the cob to supply him with such medicines as I thought necessary in the treatment of the case : this I did. On the 4th the animal was brought to the college for my inspection, when I found that the inter-maxillary glands were not only tumefied, but presented all the indications of approaching suppuration, while there was a profuse catarrhal discharge from both nostrils, these conditions being closely allied in character to those accompanying Strangles. In due course suppuration of the glands ensued, and the abscesses were lanced, exit being given to a large quantity of laudable pus, and coincidently with the maturation of the abscesses the mouth lesions subsided, and the animal rapidly became convalescent.

On the 7th of April I was asked to look at another cob which, it was stated, had been showing symptoms of the same disease for two or three days ; on examination I found the conditions already described in the first case in existence, and the course of the malady was identical. About the same time the remaining animal became affected, but remedial measures were promptly applied, and the disease was arrested, as it were, in the initial stage, the animal continuing to perform its usual work. The course of the affection in the case of these cobs, assuming that the disease was Variola, struck me as being rather remarkable, and I came to the conclusion that it was simply a form of Pustular Stomatitis of a contagious character, and not Variola at all. Indeed the eruption, in its course and character, though resembling that of Variola, differed from it in certain essential particulars, which I shall presently notice, and in none of the cases were there any systemic lesions of any kind developed.

On the 27th June I was requested by a horse-dealer to examine a number of his horses as, according to the statement of the messenger, they could not eat their food. In this instance I found on examination that there were four horses (Irish) out of some eight or nine showing symptoms of Pustular Stomatitis, but of a milder type and in an earlier stage than in the case of the two first cobs mentioned. These animals were all standing in the same stable, in a continuous line, some in boxes, others in stalls, and the same pail was in use for the whole of them. The disease had been introduced by a horse from the north of England. Treatment was at once adopted ; the boxes, stalls, mangers, and racks were thoroughly cleaned and disinfected, and strict injunctions given not to use any contaminated sponge or cloth to the healthy animals; but as the accommodation was limited the horses were allowed to remain in the stable. In not one of these cases was there any formation of abscesses, and in only one animal (the first attacked) did the eruption attain to any marked proportions, and they all recovered in about twelve days without the development of any cutaneous eruptions.

I have said that the eruption in these cases differed somewhat from that with which we are familiar in V. Equina. It was, like the last mentioned, localised mainly in the floor of the buccal cavity and in the inner aspect of the lips, particularly the upper, and of the cheeks. It presented itself in the form of a crop of nodules, about the size of a hempseed, hard in consistence, and, where the hue could be distinctly seen, of a greyish colour, the membrane being, however, somewhat inflamed. These nodules gradually

increased in size, and about the fourth day pustules were formed, the irruption of which was followed by ulcers, circular in shape, and about the size of the half of a split pea. At first discrete in every case, many of them became confluent, and thus formed large irregular patches of ulceration; in no instance, however, was there any marked tumefaction of the mucous membrane; but as in several of the animals natural pigmentation existed, distinct white marks were left behind; these gradually passed off. In those cases to which remedial measures were applied confluence of the ulcers never took place, and the healing process was materially hastened.

(To be continued.)

NORFOLK AND EASTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE usual half-yearly meeting was held on the 3rd February, at the Norfolk Hotel, Norwich. G. A. Banham, Esq., F.R.C.V.S., Cambridge, President, in the chair; and amongst the members present there were Messrs. Santy and Slipper, Norwich; W. Shipley, Great Yarmouth; T. E. Auger, Wymondham; H. Newson, Beccles; R. T. Barcham, North Walsham; J. K. Gooch, Holt; and the Hon. Sec., J. D. Overed, Blofield.

Letters regretting their inability to attend the meeting were received from several gentlemen.

The minutes of the last meeting having been read and confirmed, the Treasurer submitted his accounts, which, having been duly audited by Messrs. Santy and Auger, were passed. It appeared that after meeting the current expenditure of the Association for the past year, and making a grant of twenty pounds in aid of the building fund of the R.C.V.S., a balance of £15 18s. 9d. remains in favour of the Association.

The election of officers was next proceeded with, as follows:—President, Mr. G. A. Banham, Cambridge; Vice-Presidents, Messrs. J. K. Gooch, Holt; H. Newson, Beccles; T. E. Auger, Wymondham; Hon. Sec. and Treasurer, Mr. R. T. Barcham, North Walsham.

Mr. J. K. GOOCH then read a very interesting and instructive paper on some of the "Diseases affecting the Stomach and Bowels in the Horse," which elicited an animated discussion from the members present, and a hearty vote of thanks was unanimously accorded to the essayist at its close.

Mr. J. D. OVERED also introduced to the notice of the members a disease, of parasitic origin, in the bowels of two-year-old colts, of which fifteen cases had recently occurred in his practice, proving rapidly fatal in some instances, whilst others, in a less advanced state, were more amenable to treatment, and were progressing towards recovery.

The disease was due to the presence in vast numbers of the *strongylus tetracanthus* in the bowels of colts at grass, causing entire loss of appetite, Acute Diarrhœa, extreme emaciation, and death from exhaustion in from two to six days after the colts were found unwell.

A hearty vote of thanks was accorded to the Chairman and other officers for their services; and regret was expressed that Mr. Overed (who had been Hon. Sec. to the Association ever since its establishment) should find it necessary to resign office.

The members afterwards took tea together, and spent a pleasant evening.

CENTRAL VETERINARY MEDICAL SOCIETY.

AT the meeting of this Society which was held on the 4th December, 1884, at the First Avenue Hotel, Holborn, Mr. J. Woodger read a very interesting paper, entitled, "Records of Cases of Tetanus in the Horse." This was considered worthy of a further consideration, and at the next meeting

of the Society, on the 15th January, 1885, Mr. Woodger, in response to a unanimous request, read his essay again, and its discussion was then resumed.

The PRESIDENT (Mr. F. W. Wragg) occupied the chair on each occasion, and the following Fellows were present:—Messrs. T. Moore, J. Rowe, W. Roots, J. Woodger, A. Broad, C. Sheather, Arthur Broad, H. J. Hancock, G. R. Dudgeon, and S. Villar. Professor Pritchard expressed, by letter, his regret at his inability to attend the meeting on the 4th December.

The following is Mr. Woodger's essay:—

TETANUS IN THE HORSE.

Record of Cases of Tetanus in the Horse.

Mr. President and Gentlemen,—Having been asked by your Secretary to introduce some subject at our Society's meeting, it occurred to me to bring you the recorded particulars of those cases of Tetanus which have come under my notice during the last few years. I may preface my remarks by saying that a certain firm, whose horses are under my care, having had the misfortune to have a large number of horses attacked by this disease, became very anxious about the matter; and my interest being also aroused, I was induced to search my case-book for the past eight years for all the data I could collect bearing upon the point. In doing this, I was very much impressed by several facts which had hitherto roused no ideas in my mind. During the eight years from 1876 to 1883 inclusive, I attended ninety-six cases of Tetanus, of which fifty-five were Idiopathic, and forty-one Traumatic.

Of the Idiopathic cases, forty-five occurred in geldings, ten in mares. Of those of Traumatic origin, thirteen were in geldings, and twenty-eight in mares.

In the years 1876, 1877, 1878, 1881, 1882, 1883, the number of cases ranged from twelve to eighteen in each year, averaging nearly fourteen annually, whilst in 1879 there occurred but six cases, and in 1880, eight. Taking the whole number of cases in the eight years, it was found that ten occurred in January, six in February, seven in March, fifteen in April, ten in May, four in June, fifteen in July, seven in August, three in September, nine in October, six in November, and four in December. As to colour, thirty-three of the patients were bay, three roan, thirteen grey, eleven brown, fifteen black, nine chestnut; of twelve, no note of the colour was taken.

Thirty-three of the Idiopathic cases, and four of the Traumatic, were horses used more or less in dust-carting. Five of the Idiopathic and five of the Traumatic were omnibus horses; and the remaining cases—seventeen Idiopathic and thirty-two Traumatic—were distributed among horses used for the saddle, carriage, and other kinds of work.

Of the fifty-five Idiopathic cases, seven geldings and one mare recovered, twenty-four geldings and five mares died or were destroyed, and fourteen geldings and four mares were not put under treatment, but at once condemned. Of the forty-one Traumatic cases, two geldings and four mares recovered, ten geldings and sixteen mares died or were destroyed, and one gelding and eight mares were not put under treatment.

Upon compiling these figures I was somewhat surprised. The Idiopathic cases outnumbered the Traumatic, though not greatly; but, taking the Idiopathic cases, I found the average to be nine geldings to two mares. It then occurred to me that in the stables from which the number of geldings came, it might be the case that fewer mares were kept, and in some two or three stables such was the fact; but in other stables there were more mares than geldings; and, upon the whole, I think there were as many mares as

geldings. If we take the omnibus horses, we find there were five Idiopathic cases, three geldings and two mares; and in these stables there are certainly more mares kept than geldings—as many as five to three, and yet there are more geldings than mares affected. Among the Traumatic cases, there were twenty-eight mares and only thirteen geldings, but in my practice there are considerably more mares than geldings—I believe even twice as many—though it would be difficult to prove this point.

Taking the months of the years, it will be observed that the smallest number of cases occurred in June, September, and December; the greatest number in April and July. In the cases put under treatment, the number of recoveries was about twenty per cent.

The most remarkable fact is that more than half of the Idiopathic cases were among horses more or less used for dust-yard work (that is, carting ashes from houses to brickfields), whereas in the Traumatic cases only ten per cent. were horses employed at this work. As nearly as I can ascertain, I only attend about 150 horses used for the dust-carting, so that the number affected would represent three per cent. per annum; whilst out of 1,800 omnibus horses I had only ten cases in the eight years—only about $\frac{1}{14}$ per cent. per annum. With regard to the other forty-nine cases, I cannot estimate the percentage, on account of the great difficulty in finding the number of horses represented, but I certainly think it cannot be less than $\frac{1}{5}$ per cent. per annum.

Williams tells us, in his "Veterinary Medicine," that Tetanus is seldom seen, if ever, in certain localities, whilst it is unusually frequent in others; possibly the district in which I practise is one of those favourable to its occurrence. I trust we shall hear the experience of the Fellows present as to the effect of various localities, and also as to the extent of the prevalence of Tetanus among horses used in different kinds of work.

When one reflects on the large number of geldings attacked with Idiopathic Tetanus, compared with the small number of the mares (nine to two), it would appear that it cannot be a matter of chance; and I cannot help thinking that the operation of castration must have some influence—must in some way be a predisposing cause of the disease. I regret to find that I did not, in my notes, record the age of each animal attacked, for it would be of interest to know how long after castration the majority of cases occurred. The disproportion between the number of cases occurring in two of the years out of the eight and the remainder, raised in my mind the question, Does temperature or rainfall have any influence on the prevalence of Tetanus? And to this I would certainly answer yes, but shall have to treat of this farther on.

With regard to colour, my figures do not show that any one coloured horse is more liable to the malady than another, nor do I see that the tint of skin or hair can have any influence in this direction, except that, perhaps, we might suppose, in proportion to their number, that we should find more grey horses among the list, in consequence of the melanotic tendency; yet I have never seen a melanotic horse with Tetanus.

I have known for some years that horses used for dust work were more frequently subject to this disease than other horses, but until I compiled these figures, I was not aware that the relative difference was so great in extent as it is.

Many reasons have been given to explain the disproportionate frequency of Tetanus in dust-yard stables, such as the probability of the horses taking foreign bodies into the stomach, and their liability to punctured wounds in the feet and legs. Now, the latter class of cases would be put under the head of Traumatic cases, and these I do not find so common as Idiopathic cases. With regard to the swallowing of foreign substances, I think that

many other horses take into the stomach a variety of things, such as coal, stones, nails, etc., and yet it is in dust-yards alone that we find the high percentage of Tetanus cases. If has occurred to me that this may very probably arise from the presence of deleterious gases given off from the dust heaps. When asked if they notice any disagreeable smell near the heaps, the men at work in the yards say they do not; but my opinion is that this is due to the fact of their having become accustomed to it, for I have noticed that there certainly is at times a faint, unpleasant odour arising from the refuse and ashes. When these mounds are perfectly dry, they may be free from any dangerous properties, but upon getting wet, more particularly in warm weather, it is possible that poisonous gases emanate from them, and so affect the horses in their vicinity, that we may look upon them as exciting causes of this disease. July and April are the months in which I have found the greatest number of cases occur; April is proverbially a wet month, and in July we generally get a large rainfall in addition to extreme heat. Before leaving the subject of the refuse dust, it may be as well to note the fact that amongst it will be found small quantities of decaying matter, both animal and vegetable, and the ashes cease (as I have said) to exert their disinfectant power when wet.

Some four or five years ago, a man in my neighbourhood asked me to visit his horse. I found it suffering from Tetanus, supervening upon "Broken Knees," and it was destroyed. Twelve months afterwards I was called in to examine the horse which had replaced the animal which was killed. The second patient had Idiopathic Tetanus, and in a coach-house adjoining the stable, and communicating with it by a door, I found upon each of my visits a ton or so of bones, the smell arising from which was most disagreeable. The man only kept one horse. When I put these facts and figures together, and saw the extraordinary number of geldings affected with Idiopathic Tetanus in comparison with the mares, and also the great prevalence of the malady among dust-yard horses, I thought it would be of interest to this Society if I laid the result before the Fellows, and hoped it would stimulate them to search their case-books, and give the result of their experience, that we thus might all acquire more knowledge of the causes in operation to produce this fearful disorder. I feel convinced that castration is a predisposing cause, and that the fact of so preponderating a number of the cases of Tetanus being found among dust-contractors' horses is, to a great extent, due to poisonous emanations from the decaying heaps of refuse always present in the yards. I also believe that the stench from the bone heaps was the cause of the disease in the last two cases referred to. No one can for a moment doubt that there are other causes of the disease, but my object has been to direct special attention to these two. In speaking of castration, I only meant to refer to those horses which have been operated upon for some length of time, and did not allude to Traumatic Tetanus as an immediate effect of the operation.

Mr. A. BROAD said he considered the allusion to the influence of noxious vapours the most valuable point in Mr. Woodyer's interesting essay, and worthy of serious consideration. At the same time he thought the great liability of dust-yard horses to Tetanus chiefly arose from the frequency with which they received injuries to their feet and legs, the dust-wharves being strewn with such substances as broken glass and china, nails, etc.; and it must be borne in mind that a small wound could easily be overlooked, and that which was a Traumatic case be styled Idiopathic; and Tetanus was as likely to follow a slight wound as a large one, his experience led him to think more so. He had known Tetanus to occur from a severe chill, and in some cases which had been termed Idiopathic he had found internal injury to a joint or other part.

Mr. WRAGG said that a few years ago he had some dust-contractors' horses under his care, and a few of them were attacked with Tetanus, as a consequence of picking up nails in their feet. He then caused more care to be taken when such an accident happened. He had the foot pared, and poulticed, and administered physic, and since giving his personal attention to these points he had not met with a case of Tetanus among the stud.

Mr. SHEATHER said he had lately seen cases of Tetanus in the district alluded to by the essayist; he thought these contractors' horses might have a great amount of backing and twisting to do in their work, and that the disorder followed spinal injury. He had met with cases of the disease in which he could but refer to an injury of this kind as the cause. In two instances Tetanus supervened a few days after the horse had had a severe fall, though in each case no injury was apparent on the animal's rising. In the case of another horse he referred to, a blister was applied to relieve intense pain in the pastern joint; this it did, but in two days Lock-jaw appeared.

Mr. MOORE said he had not had a large number of cases of Tetanus to treat, and none of those he had met with were among cart-horses. He had discontinued administering hypodermic injections in these cases, on account of Spasm being frequently induced; he preferred the method of slowly syringing the agent over the animal's tongue. He thought the use of the term Idiopathic had no more value than to signify that the cause of the disease in a particular case was unknown.

Mr. HANCOCK differed from the opinion of the essayist that geldings were more liable to Tetanus than mares; more geldings might appear in the case-book, but he thought that accounted for by the fact that more geldings than mares were used by most London firms. Neither did he consider that castration could in any way, after a lapse of years, bring about the production of Tetanus. In common with others of the Fellows, he expressed dislike to the use of the term Idiopathic, and believed that there always existed an injury, either external or internal.

Mr. ROOTS considered the essayist's remarks on the influence of different localities were well-founded. In the district of South London, in which he practised Tetanus was very uncommon.

Mr. WOODGER remarked that he had in his own practice found great difference in the distribution of the cases; in Notting Hill and Hammersmith Tetanus had been of frequent occurrence, while in Paddington and Fulham few cases occurred. He thought the prevalence of the disorder in dust-yards could not be due to the horses having any unusual strain put upon their backs; were they subject to this, he would expect to find other injuries from that cause especially abundant, and such was not the case, and it was not a fact that their loads were heavy. He considered it very advisable to retain the use of the terms Idiopathic and Traumatic, as the latter signified that the exciting cause of the disease was known. We regard to Mr. Hancock's remark on castration, he would state that there was certainly one effect of the operation which might remain, and be a source of irritation for an indefinite time—this was Scirrhus of the spermatic cord. The influence of noxious vapours was recognised as a cause of the disease in the human subject, as was also severe cold. In common with Mr. Wragg and other speakers, he had often found those cases recover which had the least medical treatment.

At the meeting on December 4th, Mr. SHEATHER showed the heart of a horse which was injured in a collison with a light pony-cart, the shaft of which penetrated between the third and fourth ribs. The left ventricle was pierced through both walls.

Mr. MOORE related the case of a cart-horse which, in turning round short, while harnessed to a mud-cart, fixed the handle of the scoop up its rectum,

breaking off about two feet of the wood. This was not discovered till the day after the injury, and was extracted with the greatest difficulty, it having passed through the rectal wall, and firmly embedded itself in the muscles of the haunch. The horse died on the day following the removal of the handle.

At the second meeting, Mr. BROAD brought to the meeting the pelvic bones of a horse severely fractured, in consequence of the animal falling while merely being led along a frosty road immediately after its purchase.

Mr. ROWE introduced a novel form of suture needle-holder made by Messrs. Krohne and Sesemann after a German model; but the opinion was unanimously expressed that no animal would stand quietly enough to admit of the employment of so delicate an instrument, firmly fixed as it must be in the hand.

ALFRED BROAD, *Hon. Secretary.*

YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE annual meeting and dinner for 1885 were held at the Queen's Hotel, Leeds, on Friday, the 30th January, at 1.30 p.m., the President, Mr. James E. Scriven, in the chair. The following members were also present, viz.:—Messrs. J. S. Carter, Jos. Freeman, W. George Schofield, B. Smith, G. W. Carter, G. Whitehead, A. W. Mason, P. Deighton, H. Snarry, T. C. Toop, W. F. Greenhalgh, H. Cooper, G. E. Bowman, Percy Carter, Peter Walker, J. H. Ferguson, and W. Broughton. Messrs. W. A. Taylor, S. Locke, T. Briggs, and Mr. Deighton's friend were present as visitors.

Apologies for non-attendance were received from Professor Walley, Professor Williams, Messrs. E. C. Dray, T. Greaves, J. W. Anderton, J. Atcherley, F. Danby, J. Bale, D. R. Sowerby, G. T. Pickering, H. Pollard, J. H. Carter, J. M. Axe, M. E. Naylor, and a number of friends, members of other societies.

The minutes of the last meeting were read and confirmed.

The SECRETARY read letters from Messrs. D. R. Sowerby, Hull, and J. H. Carter, Burnley, tendering their resignations as members of the Society.

The SECRETARY introduced the subject of election of Members of Council in May next, and after some desultory discussion, Mr. SCHOFIELD proposed, and the HON. SECRETARY seconded, the resolution, "That Mr. Joseph Shepherd Carter, F.R.C.V.S., Bradford, be nominated as a candidate from this Society." Carried unanimously.

Mr. CARTER said, if elected, he would endeavour to discharge the duties to the best of his ability.

Mr. MASON proposed, and Mr. FERGUSON seconded, that the Secretary be empowered to take the necessary measures in order to secure Mr. Carter's return. Carried.

The PRESIDENT then delivered the inaugural address, etc., for which a unanimous vote of thanks was awarded him.

President's Inaugural Address.

Gentlemen,—In rising to address you, permit me, in the first place, to thank you for the high honour you have conferred upon me by electing me as your President for the current year. It is with feelings of trepidation that I venture to assume the dignified position unanimously appointed me. I feel sure there are many amongst you who would have filled the presidential chair with greater credit than myself, yet I assure you that it shall be my bounden duty, whilst occupying this position, to endeavour to further the interests and progress of this Society, so as to fully merit the approbation of the members.

I would ask in return that every member of this Society would give me his

best support by a constant attendance at our meetings, and would also invite the attendance of members of other societies, and thus bring about much mutual benefit by a more frequent interchange of views, ideas, and opinions, which would undoubtedly tend to advance our knowledge of the diseases of the various animals which our noble profession calls upon us to treat in our respective practices.

During the past few years, you are all aware, there has been made some immense strides of progression in veterinary science, and I am quite sure you will all agree with me in expressing the hope that such a favourable impulse to our professional knowledge may be kept up with unabated zeal, vigour, and perseverance, so as to compare favourably with the onward progress of our sister, the medical profession.

Great reforms have taken place also lately affecting alike the schools, the students, and the practitioner. Rapid as the strides have been in these respects, they are continuing, and will still continue, and it is therefore for every member of our profession to watch with zealous care that no false steps are taken. We read of agricultural and other societies acting promptly when their special interests are involved; and we find that by unlimited discussion and well-matured plans, they invariably attain their special purposes.

With respect to the colleges or schools, I understand, there is a great number of young gentlemen pursuing their studies with the intention of becoming, I trust, honourable members of our profession; and with the great facilities now afforded to students to give them scientific knowledge, a great impetus to the social status of the profession must necessarily follow.

I understand that the examinations of the students have for some time past been unusually strict, and in the opinion of some members of the profession, too severe; still I am aware that it is essential every student should thoroughly understand the practical duties of his profession before receiving the diploma.

It appears to me that one of the greatest difficulties under which our profession labours is not being able to provide suitable facilities at the schools for students obtaining a knowledge of the diseases of ruminants, which form such an important part of the curriculum of veterinary education, and which afterwards forms one of the principal items in the daily practice of the veterinary surgeon. I am certainly one of those who believe it strictly essential that a student should be engaged in active practice with a M.R.C.V.S. for at least twelve months prior to receiving his diploma. At the same time, I am much puzzled with the statement made by the professors, that the students who have served a pupilage are more unsuccessful at the examining board than the non-pupilage student who has not received the advantage of practical tuition with a M.R.C.V.S.

I was glad to find that at the last meeting of Council three practical gentlemen were added to the Board of Examiners, and I hope that their long practical experience will eventually redound to the benefit of the student, reflect credit upon themselves, and be advantageous to the nation at large.

It is a pleasing fact to know that for some months past this country has been almost free from Foot-and-mouth Disease, owing, no doubt, in some measure to the long-continued dry weather we enjoyed last year, which, in some unknown manner, tended to arrest the fructification of the germs of this troublesome disease; and it is to be hoped that the utmost vigilance will be exercised in Ireland in order to prevent the disease being imported into this country, as I am quite certain that Irish cattle are great propagators of the disease into Yorkshire and the northern counties of England.

A few cases of Contagious Pleuro-pneumonia keep cropping up, but by the vigilant exercise of the restrictive regulation, the disease is checked, and prevented from spreading to any serious extent.

It is very unfortunate that farmers, cow-keepers, and dairymen cannot be persuaded to isolate their new purchases of stock for at least a period of one month, thus in a great measure preventing outbreaks of contagious diseases in their cattle.

The occurrences of outbreaks of Swine Fever are not so frequent as formerly—no doubt owing to the strict sanitary precautions adopted both in the counties and in the towns.

No doubt most of you will have noticed that a very bad specimen of quackery, emanating from a very high authority, has appeared in veterinary and agricultural journals. I allude to the pamphlet published by Professor Brown, and entitled the "Domestic Veterinary Treatment of the Animals of the Farm," intended for the use of farmers and agriculturists, etc. I think this not a step in the right direction, and Professor Brown might be more beneficially employed, or he might devote his time to more advantage in not propagating quackery of this kind; and I am much surprised to see that he is assisted in his unprofessional scheme by members of the profession in almost every county in England, who are acting as his agents.

I regret to hear that our late talented President of the Royal College has been seriously ill, but I understand he is now progressing favourably, and I hope he will soon be able to prosecute the vigorous and untiring labours which have characterised his career hitherto.

I am also sorry to inform you that one of the oldest members of our Society, viz., Mr. Naylor, of Wakefield, has had the misfortune to be partially incapacitated from his duties, but am pleased to learn that he is slowly recovering.

We have also to lament the death of our old esteemed and well-tried friend, Mr. James Freeman, of Hull, who, as you all know, was ever active in his mind, and liberal in his pocket, in order to carry out any project connected with the well-being of the profession.

And now, gentlemen, it gives me great pleasure to inform you that this Association is in a very flourishing condition, numerically and financially. As Yorkshire being such a large county, the members are very wide apart, and only one third of the veterinary surgeons are members of this Association, it is with difficulty we can get a large number together.

I would beg all members of the profession to become members of the Mutual Defence Society, as none of us are perfect, and we do not know how soon we might be wrecked on that troubled sea where the only lifeboat is called the Mutual Defence.

There is another society which every veterinary surgeon ought to be a member of—that is, the National Benevolent Society; because none of us can see far enough through the dim vista of this life into the future so as to be able to say we may not require the aid of this most excellent Society.

And now, gentlemen, allow me to thank you for the kindness you have shown by listening so patiently to my brief remarks, few as they are. I hope they have been offensive to none, but appreciated by all; and, if not too late, I beg to wish each, individually, singly, and particularly, a happy and prosperous year, and may the grim hand of Death grasp no one connected with us.

The SECRETARY related a local case of Paralysis affecting the rectum and tail of a three-year-old filly; and Mr. SNARRY detailed a peculiar case of sloughing of the hoof.

Mr. GEORGE CARTER related a case of very acute Rheumatism in a harness horse. The animal was newly clipped, and after being driven five miles at a quick pace, was placed in an exposed shed for half an hour. When wanted, the horse was found to be very stiff behind, could scarcely move after going part of the return journey, and was compelled to be stabled at once.

The symptoms were: Pulse weak, and upwards of 100°; respiration hurried, palpitation of the heart, violent pains in the hind limbs, and general nervous excitation. The horse succumbed in seven or eight hours from the beginning of the attack. The *post-mortem* examination revealed extensive Endocarditis, Congestion of the Lungs, and the joints contained a small portion of synoviæ, and that of a viscid character; there was no discolouration of the urine.

Mr. SCHOFIELD gave his experience of Rheumatic Disease, particularly affecting cattle; and Mr. DEIGHTON had recently treated a case successfully by the exhibition of Potass. Bi.-carb.

The dinner took place in the evening, when, after the usual loyal and patriotic toasts had been right loyally responded to, a number of toasts appertaining to the profession were duly proposed and responded to, the evening being passed in an amiable and pleasant manner.

Mr. T. C. TOOP kindly volunteered to read a paper for discussion at the April meeting of the Society.

ROYAL COLLEGE OF VETERINARY SURGEONS.

AT the meetings of the Court of Examiners of the Royal College of Veterinary Surgeons held in London on the 13th and 14th of January, 1885, the following students from the Royal Veterinary College were admitted members of the profession:—

Mr. E. J. Catmull	Wakering, Essex.
„ A. C. Piesse	Brixton Road, S.W.
„ G. W. Roberts	London, N.
„ G. E. Fryer	Kirkby Fleetham, Yorks.
„ F. W. Leigh	Westbury-on-Trym.
„ G. W. M. Haydon	Cheriton Bishop, Exeter.
„ James Farmer	Kennington Green, S.E.
„ F. T. Harvey	St. Columb, Cornwall.

The following students passed their "Second Examination" on 10th and 12th of January:—

R. E. Brundell.
A. E. Sangster.
J. M. Tebbott.
W. B. Blunsom.
A. T. Farr.
T. S. Newbury.
L. Barrett.
A. H. Oliver.
J. R. Green.
H. Gray.
A. P. Burgon.
F. Hallilay.
F. Stephens.

The following passed their "First Examination" on the 7th, 8th, and 9th January:—

H. Goodwin.
W. Western.
W. E. Matthews.
*H. F. Sugden.
*W. H. Flook.
J. P. Walter.
A. C. Elliot.
H. Lukes.
*R. W. Clarke.
†H. A. MacCormack.
†S. Savournin.
T. H. Hine.
C. Rose.
T. D. Snowdon.
†H. King.
A. Moore.
W. T. Edwards.
E. Tarleton.
*W. B. Nelder.
†W. G. Patrick.

* Marked thus passed with "Great Credit."
† Marked thus passed with "Very Great Credit."

At meetings of the Scottish Section of the Board of Examiners, held in Edinburgh and Glasgow on and between January 19th and 24th, the following gentlemen passed their "Final Examinations," and were admitted members of the profession :—

Dick Veterinary College, Edinburgh.

Mr. John Hackett...	... ...	Pointon, Folkingham, Lincolnshire.
„ Richard Millar	... ...	Hornby, Lancashire.
„ Alfred W. Barnes	... ...	London.

New Veterinary College, Edinburgh.

Mr. Sam. W. Martin	... ...	Chesterfield, Derbyshire.
„ Albert Gledhill	... ...	Halifax, Yorkshire.
„ Gerard H. Hulme	... ...	Knutsford, Cheshire.

Glasgow Veterinary College.

Mr. John Steel	... ...	Cumnock, Ayrshire.
„ James K. Calderwood	...	Paisley, Renfrewshire.
„ James Gowans Deans	...	Paisley, Renfrewshire.
„ George E. Gibson	... ...	Hull, Yorkshire.
„ Alexander Reid	... ...	Magheramore, Co. Antrim.
„ Gavin Herron	... ...	Stirling, Stirlingshire.

The following gentlemen passed their "Second Examination" :—

Dick Veterinary College, Edinburgh.

Mr. Frederick Kidd.	Mr. Lawrence Power.
„ Thomas Barker.	

Glasgow Veterinary College.

Mr. D. Wooley.	Mr. R. B. Scott.
„ W. Hill.	

The following gentlemen passed their "First Examination" :—

Dick Veterinary College, Edinburgh.

Mr. C. Campbell.	Mr. H. Broughton.
„ J. McAleer.	„ George Parr.
* „ James Matthews.	

New Veterinary College, Edinburgh.

Mr. Thomas Inglis.	Mr. A. Williams.
„ J. Hall.	„ E. Collins.
„ W. J. Wood.	„ J. Brigham.
„ R. Eastwood.	„ W. Scott.
* „ W. J. Tatam.	

Glasgow Veterinary College.

Mr. Gavin Miller.	Mr. T. B. Gorecki.
„ T. J. Campbell.	„ T. B. Muter.
„ S. G. Howard.	

Edinburgh, *February 10th*, 1885. R. RUTHERFORD, M.R.C.V.S.,
Secretary, Scottish Section of the Board of Examiners.

Army Veterinary Department.

Gazette, February 3rd.

THE following gentlemen to be Veterinary Surgeons on probation: Edward Taylor, Alfred Joseph Haslam: dated February 4th.

Gazette, February 10th.

Veterinary Surgeon (First Class) F. Duck to have the local rank of Inspecting Veterinary Surgeon whilst employed as senior Veterinary Surgeon in South Africa, dated December 24th, 1884.

Gazette, February 17th.

Veterinary Surgeon on probation, C. E. Nuthall, to be Veterinary Surgeon.

The fall of Khartoum and the events in the Soudan, have necessitated the despatch of a large body of troops from this country and the following veterinary officers: Inspecting Veterinary Surgeon Walters (to have the local rank of Principal Veterinary Surgeon), Veterinary Surgeons Hinge, Baldock, Aitken, Hagger, Betser, Dundon, Taylor, and Sharp, making a total of eighteen veterinary surgeons now in that country.

The following officers have embarked for India for a tour of service in that country: J. W. Evans, C. E. Nuthall, J. P. Adams, M. C. Mitchell.

The disposition of the veterinary officers in South Africa is as follows: With Bechuanaland Field Force, F. Duck (acting Inspector), J. H. Cox, F. F. Crawford, J. C. Berne, C. Rutherford; in Natal, J. C. Woods, J. E. Elphick, J. Finlayson.

At the Viceregal Levee held at Dublin Castle on February 3rd, the following veterinary officers were presented to the Viceroy by Inspecting Veterinary Surgeon W. B. Walters: D. C. Pallin, W. A. Russell, G. Whitfield.

Obituary.

RICHARD MORGAN, M.R.C.V.S., died at Calcutta on October 3rd, aged thirty-four years. He graduated in 1873, and soon after went to India, joining a large horse repository in Calcutta, and ultimately becoming the representative of another similar establishment there. He was much esteemed by a large circle of friends.

An old member of the profession has passed away in the person of John Greaves, M.R.C.V.S., of Flixton, near Manchester, who graduated so long ago as 1829.

The death is reported of Augustus Bowles, M.R.C.V.S., of Abergavenny, who was fatally injured by being thrown out of his gig. He graduated in 1857.

Notes and News.

A STRANGE DISEASE AMONG SHEEP.—A curious disease affecting the feet and mouths of sheep in the Quirmindi district of New South Wales has been attributed by Professor R. Von Leudenfeld to the presence of *amobæ*, derived from a creek to which the sheep resorted for water.

ABORTION AMONG COWS IN ABERDEENSHIRE.—Very serious loss has been sustained by breeders of shorthorns in Aberdeenshire this season. In

several herds of well-known repute about forty cows have slipped their calves, and fears are entertained of a number more following. The frequency with which pure-bred herds have been devasted in this manner makes the heavy loss to be the more deplored. Last year scarcely a single calf was left in one Aberdeenshire herd, the most of the cows having all slipped. The cause was at first assigned to over-feeding, but this has proved a fallacy in at least two of the herds, where under-feeding rather than over-feeding was practised.

FLESH CONSUMPTION STATISTICS give the yearly consumption of meat *per capita* in the United States, as about 120 pounds. The Englishman consumes 105 pounds; the Frenchman 74 pounds, and the German 69 pounds.

VETERINARY LITERATURE.—Since the establishment of the *Recueil de Médecine Vétérinaire*, in 1829, until about ten years ago, that journal was more particularly the organ of the Alfort School. From some cause or other the authorities of the school saw fit to sever their connection with the *Recueil*, and started the *Archives Vétérinaires*, which has been continued up to the end of last year. A change has now taken place, the *Archives* has ceased to appear, and the *Recueil* has assumed its old position, the teachers of the school appearing on its staff.

THE BERLIN VETERINARY SCHOOL.—During the year 1882-3, the number of horses admitted to the hospital for treatment was 1,918, and for examination 703; while in the polyclinic or external practice 4,660 were treated and 163 examined. In the dog clinic, 4,903 were admitted for treatment and 1,951 to be poisoned. In the ambulatory or external clinic, for contagious diseases, 15 herds of cattle, 5 of sheep, and 6 of swine were visited; while for sporadic diseases 430 cattle, 3 sheep, 8 goats, and 20 pigs were inspected.

Correspondence.

TUBERCULOUS MILK.

DEAR SIR,—In your issue for January last I observe a rather peculiar production, from the pen of Mr. J. Harrison, under the above heading; and as that gentleman arrogates to himself the position of a judge in reference to my writings on Tubercle, you must allow me space for a short reply to his animadversions.

Mr. Harrison insinuates that I claim the honour of being (in my own estimation) an authority on Tubercle, and that I insist on the transmission of this dire malady from the bovine to the human subject by means of the milk from the former. Well, the latter fact is not only credited, but also well known and proved, all over the world; but as to considering myself an authority on the subject, I emphatically deny ever having entertained such an idea. I am not capable, neither have I the time nor will to enter upon such a series of observations as would render me an authority upon this most important question. I have, however, all along freely spoken out my mind, and in doing so have invariably stuck to what I have seen and experienced; and I confess that I quite enjoy a hit or two at any one, be they medical or veterinary, who may happen to differ with my own ideas. This is not only quite natural, but perfectly legal, in any literary circle.

I submit, in complete contradiction to Mr. Harrison's sweeping condemnation of my ideas, that every statement contained in my article on Dr. Imlach's report of his researches carries the proof of its truth in itself. Not so, however, when we come to consider Mr. Harrison's "few additional

ideas" bearing on the question, for he commences by telling us that he considers the "*nature*" of bacilli to be an "*excretory product*," which is certainly an idea sufficiently extraordinary and incomprehensible to be all his own. Further, it seems that this excretory product has some remarkable connection not only with Tubercle, but also with "every other infectious disease affecting cattle"!

These are the only original "additional ideas" brought forward by Mr. J. Harrison; the rest of his remarks go entirely to prove the position taken up by myself and a host of other writers—namely, that the chief agent in propagating Tubercle in man and the lower animals is *our milk supply*!

Faithfully yours,

Banff, 14*th February*, 1885. A. MACGILLIVRAY, V.S.

TUBERCULOSIS IN CATTLE.

SIR,—The remarks of Professor Walley on my communication "in reference" to Mr. McGillivray's strictures on Dr. Imlach, in regard to the normal temperature of the bovines in connection with Tuberculosis in cattle, are a little ambiguous, and having it very strongly impressed on my mind that the old adage is in the main true, that "fools and little children should be careful how they handle sharp-edged tools, or they may get cut," I shall touch Professor Walley very tenderly. I am very glad that the Professor agrees with me that there is "manifest" danger in using milk from tuberculous cows when udder lesions exist, and on the face of his letter there is evidence that he has not seen a less number than one of such cases. Leaving Dr. Imlach to take care of himself, Professor Walley's letter indicates two heads (exclusive of the instrument used), viz.: the normal temperature of our domestic animals, and the implied dispute as to whether many tuberculous or so-called tuberculous cows have udder lesions such as indicated in my last contribution to your Journal.

I shall, with your permission, discuss with the Professor these two heads separately and *seriatim*. If my paper does not get too long, I may add a little other matter for thought for the Professor. Before commencing, let me describe the instrument I am using at present. It is a veterinary clinical thermometer with a magnified index, not self-registering. I don't believe in complications (in any instrument) if the operator has his eyesight. The arrow mark is standing at 98·⅘, not 98·4 as stated in my communication (page 16). The human normal must have been running in my mind when I wrote, and I did not take the trouble to look at my own instrument; so much for carelessness in writing for the press; it gives the Professor one chalk, but nevertheless, if he will not think me too contradictious, I would like to hint that I rather dispute 98·4 as an average normal gauge, even in the human subject. However, this is matter I have nothing to do with, and shall proceed to consider the normal temperature of healthy domestic animals within my range of practice in Westmoreland, leaving your readers to form their own conclusions as to which of the three of us is nearest the mark.

Having in view my intention to reply to Professor Walley, and also substantiate my remarks against Mr. Macgillivray, which, at the time, were written from memory of observations in casual practice, I have to-day, February 6th, being a vacant day, made a series of observations on temperature amongst the domestic animals on my own farm, which I will give to the profession for what they are worth.

First, then, I have a flock of black-faced, heath-going, in-lamb ewes in an

allotment on the Pennine range of mountains ; the size of it is about thirty-five acres, and it is rectangular in shape. I brought the flock down from the top to the bottom at a running pace, and folded about a score quickly ; they were all well out of "puff," breathing quickly. I took six of them at random, and tied three feet in each one of them as I caught them, at an interval of five minutes between each sheep. The first one registered 101 ; second, 99·1 ; third, 100 ; fourth, 100 ; fifth, 98·4 ; sixth, 100·1—all rectal temperature There was nothing unusual in this experiment. In the first sheep the quicksilver ran in a few seconds up to 100 F. In the others it required two or three minutes and an insertion of the instrument over the arrow mark to reach the temperatures I found. They were all strong, healthy young sheep, with the exception of the fifth, which ought to have been drafted.

My next series of observations was with two heifer stirks, one bullock ditto, and one yearling bull full of condition. First registered 97·4 F. ; second, 96 ; third, 98 ; fourth, 98. Next was with eight cows and calving heifers ; first registered 97 F. ; second, 98 ; third, 96 ; fourth, 97 ; fifth, 98·1 ; sixth, 96 ; seventh, 97 ; and eighth, 97. Next was with three two-year-old heifers ; two registered 98 F., and one 96·1. Next was two two-year-old bullocks ; one registered 98 F., the other 96. The next was three winter calves fed on milk, oilcake, and hay ; one registered 97 F. ; and two 98. The next animal operated upon was a brown cob pony, very fat, seven-year-old ; he registered 96 F. I had a mare in the same stable, but she declined the operation, and I did not press it. I may remark that the whole of these animals are good, healthy stock, fed mostly on good hay, and in average store condition. I commenced with them at half-past one, p.m., two hours after they had had their mid-day meal ; and they had all, or nearly all, laid down, so that they were perfectly on the quiet. I have no doubt, if I had let them out of the byre and given them a sharp stir up with a dog, but what they would have registered one or two degrees higher. The time I took for these cattle and the pony was one hour and five minutes. I had two assistants—one to take the notes, and the other to hold their tails aside ; and by no kind of manipulation with the instrument could I persuade the mercury to travel any higher up in the tube than the degrees I have recorded. I next had a flock of sheep fetched into the yard, consisting of black-faced, Leicester, and cross-down, I took five of them after they had stood about one hour to get settled. The first registered 99·1 ; second, 97·2 ; third, 99·2 ; fourth, 100·1 ; fifth, 100. My next operation was on two dogs—one registered 99, the other 98·3 ; concluding with two "tom" cats—one 99·3, the other 98 ; the first one got out of temper before I got him, and that, I think, increased his temperature. I have only now to remark that the thermometer is not an instrument to be depended on as an aid to diagnosing disease amongst our domestic animals, so much depends on the way and manner it is used, as well as the considerations of the different temperaments : some animals get quite feverish on the approach of strangers, and I have found in practice that when once the normal temperature is increased by any temporary ailment, a sharp drive or gallop so as to increase the respiration will send the quicksilver up two or three degrees, whilst an hour's rest without any treatment will reduce the temperature to the amount it was increased ; I have demonstrated this fact to some of my clients. It is very useful in treating disease ; you get a gauge to start from, and if it is a high one, say two or three degrees above normal, depletives are indicated ; if normal or lower, stimulants or tonics are often useful. Professor Walley says he has known young, vigorous animals "give a register of 103 F." I have found a heavy milk cow twelve hours after calving register 104·2 F. and yet not show the slightest symptom of Apoplexy or Puerperal Fever, neither did she even take on either, but

gradually settled down without any treatment whatever, and my family doctor tells me he has noted the same thing frequently in the human subject. Having now said what I have to say on the normal temperature of our domestic animals, I proceed to consider what the Professor says in regard to his experience as to the "softening or calcareous processes in the udder," not according with mine, and he goes on to say that such processes in that organ "I have very seldom seen." Now, as I said at the outset of this letter, I wish to treat the Professor very tenderly—and I will here add with the greatest deference—but must certainly confess to my total ignorance of any knowledge, either from college teaching or actual practice, that the terms "softening or calcareous" were synonymous in regard to tubercle; neither if he had read my communication carefully, would he find that I even hinted that I had seen such a process; what I said (page 17) was that I had made *post-mortem* examinations of cows which have died from the disease, and found tuberculous nodules in every stage of development down to the total breaking up of the mass in their udders. It is very many years since I demonstrated this fact before one of the largest farmers on the Earl of Lonsdale's estate in Westmoreland, and two or three smaller farmers, and they were thoroughly astonished. Not only the udder, but the lungs and mesenteric glands of this particular cow, were full or studded with nodules or coalesced tuberculous depositions, and a longitudinal or transverse section of the udder showed spurts of creamy pultaceous masses from a great many centres; those in the lungs were in the same state, and the nodules attached to the mesenteric glands, when cut across, were all more or less broken up in their centres. I never saw any of those chalky or calcareous accretions in the udder of a cow, and if I did, so far as my knowledge goes, I should count them harmless to the natural secretion of that organ; they are, in my opinion, not a process of development, but a total arrestment of tuberculous deposition; they become encased in a fibrous capsule, and if the animal's health is generally improved by tonics and nourishing food, she will very often make herself fit for the butchers, and Professor Walley will see more of this kind of thing hanging up in the shambles than anywhere else. It is quite true that these calcareous aggregations of tuberculous deposit in the lungs of cattle, do very often set up a sub-inflammatory action in the lung tissue, resulting in the formation of abscesses, which break up the lungs as effectually as the fully-developed tubercle does; but then, I hold that the exuded product of an abscess is essentially different, both in its chemical and microscopic elements, to what that of pure tubercle is, and if this process took place in the udder of a milch cow, I should hardly consider it as dangerous for human consumption as if pure tuberculous matter became contaminated with the milk, though it might be quite as disagreeable. My paper is getting, I am afraid, too long, or I would like to have asked the Professor if there is any difference between Scrofula and Tuberculosis in cattle; if he replies at all to this contribution, I think the profession would be glad to hear his definition, and at the same time describe the physical appearances in beasts suffering from the former complaint. It is, in my opinion, the greatest scourge at present existing amongst the bovines in England, or at least in my practice.

JNO. HARRISON, M.R.C.V.S.

Westmoreland, *February 7th*, 1884.

THE PATHOLOGY OF BURSATTEE.

SIR,—However much Mr. Burke's views may differ from mine, he at least should not credit me with statements which I have never made. In no part of my communication did I attempt to *instruct* the profession how to harden diseased tissues for microscopical examination, nor did I state that sores should not be examined after hardening in chromic acid.

I do not intend to open any controversy on the subject, but simply wish to correct what appears to me to be a most astounding misstatement.

India, *December*, 1884. F. SMITH.

DISEASE IN FOWLS.

DEAR SIR,—Perhaps some of my brother practitioners will kindly give me a little information upon the following matter, as I must confess I have not satisfied myself.

A good number of fowls in this neighbourhood have lately died, and upon *post-mortem* examination, the lungs are found to be intensely inflamed and decreased in size; the whole of the other viscera are perfectly healthy, and there is nothing, in fact, to cause death, except the before-mentioned inflammation of lungs.

The birds gradually waste in condition, mope, and die, showing no particular symptoms.

There is no change in their habits, food, etc.—I am, faithfully yours,

"SEARCHER."

THE BOARD OF EXAMINERS.

SIR,—When one reads now-a-days the startling header that "grave interests are involved and imperilled," a chord of anxious disquiet is ruthlessly struck, and the eye is wont to scan fitfully and fearfully the secret information to be disclosed; and great must have been the relief to many a reader of the letter you have published from Mr. Greaves, on discovering that the warning bore no reference to dynamite or other impending destruction, but only to some strange phantom which has upreared to his imagination in connection with the Examining Board of the Royal College of Veterinary Surgeons. I have the honour to hold office on the Board of Examiners, and would therefore rather have remained silently neutral in the controversy which has been indulged in of late on the subject of the examinations; but when an old and respected member of Council can allow himself to be so beguiled into belief of the *unreal*, and to pose as a medium for the unintentional misguidance of others, it is but right that an explanation should be given to remove false impressions.

As Mr. Greaves but follows in the wake of others equally misinformed, or otherwise, as may be, who have lent their aid to lead astray by disseminating observations not to be verified by fact, I may briefly refer to some of them, only that they may be placed in their true light.

I may say at once of the "*three respects*" in which the working of the

Board of Examiners is so *exceedingly objectionable* in the estimation of Mr. Greaves, that they are but "the baseless fabric of this vision."

Firstly, the expression "*So many absentees from the Examining Board*" is mere figure of speech, as, in point of fact, the absence of an examiner has been singularly rare, and whenever it has unavoidably occurred the place has always been filled to the satisfaction of the absentee and of the Board. During the long time I have officiated as an examiner, I think only on one occasion have I delegated my duty, and that on the last day of one of the Scotch examinations, with Sunday intervening, when illness in my home hastened my return. I plead, therefore, guilty, through this one unforeseen emergency, to having rendered the Board, according to Mr. Greaves only, "*irregular, temporised, and incompetent*," by allowing my duties for the nonce to be performed by such "*outsiders and extraneous members*" as Dr. Fleming and Mr. Rutherford. The practical examination in the morning was conducted for me by Dr. Fleming, who was otherwise officially unoccupied for the entire day, having no other duty in connection with the requirements of the Board until the oral examination in the evening. Of the gentleman who kindly filled my post at the oral examination in the evening, I may say he has had the opportunity of hearing the examinations by myself of scores of candidates, and as he began his task with my full confidence, so he completed it to the entire satisfaction of my colleague. It is to be regretted, in friendship for the writer, and in respect for our professional community, that the exceedingly objectionable observations in Mr. Greaves's letter have been permitted to appear in print.

Secondly, Mr. Greaves assumes that the examinations are prolonged as to number of days by reason of *fewness of examiners*. Now this is not so; the Council having fixed the number of candidates to be taken for one day's examination, that number has invariably been regularly, easily, and efficiently adhered to, except on occasions when, for economy to the college, or to suit the convenience of others, an addition has been made to the number, and the Board has always complied with the desire. An addition to the number of examiners would, therefore, in no way expedite the business of the meetings under the present regulation. Four days' work could, of course, be done in *two* by additional examiners constituting a second and distinct Board, and twice the number of candidates being taken in a day; but I question whether there would not be great disadvantage, if not objection, in such a course, and which would be doing away with the scheme of *oneness* of examination for the pupils of all the colleges, which has been considered so desirable, and which is now on its trial under the functions of the present Board.

In this, thirdly, Mr. Greaves is again fighting a windmill through accepting pure fiction for fact; and, sadder still, is again discourteous in his insinuation when he writes: "*The examiners who do put in an appearance* have nearly always to do double duty."

It was an unfortunate mistake, as others also consider, that remarks should have been made publicly at the opening address at one of the colleges in disparagement of the Board of Examiners, being as unmerited as unjust, and so calculated in its irritating and misleading influence to disturb the *entente cordiale* which has existed, and should continue to exist, between the students and the examiners. When the audience was invited to "look on this picture and on that"—how in the days of the former Board the rejections were but 5 to 15 per cent., and under the present Board were 50 per cent.—the further information was not forthcoming with respect to the altered circumstances under which the examinations are now ordered, and which would have afforded an all-sufficient answer. Let it, then, be told. Under the older system referred to it was customary to examine on an average six students in the hour, each passing before *one examiner* only, and for some twenty minutes of time, during which one horse was supposed

to be carefully examined, his several defects detected and explained, together with sufficient questioning on matters practical generally, and the Council and every one tacitly believing the test was all-sufficient to prove a candidate fully qualified. In the members of the former Board, as in those of the present, it is my pride and happiness to know in each one an old familiar friend, many contemporary with myself in professional career. I was invited to act as examiner during the latter part of the term of office of the old Board, and can testify there is not a pin to choose as to individual fitness for the duty. It was six of one and half-a-dozen of the other; but the former Board was fettered in its function, and the scope altogether inadequate. What had been the system on the early introduction of the "practical" is the system now; each student is examined for at least twenty minutes, but not limited thereto, separately by each of the two examiners—being *three* students in the hour instead of *six*. In the first half the student is free to examine uninterruptedly in his own way, under the observation of the examiner, a horse as to soundness and general defects, to point them out, and be questioned thereon. He then passes over to the second examiner, to be questioned on one, two, or three horses, as may be desirable, and on other practical details; and there again as much time or more is devoted as embraced the entire test under the old rule. So long as the examiners, with conscience void of offence, have known that they have done their duty with painstaking, honesty, and impartiality, I believe, individually or collectively, they have cared little for the tittle-tattle of inuendo, begotten of vexation and disappointment at the increased percentage of rejections at the more recent examinations.

It was but a nine days' wonder, and I believe all is forgiven and forgotten in the recognition and acknowledgment that the examiners have done a good service in the interest of all concerned.

J. ROALFE COX.

London, *February 14th*, 1885.

SIR,—I regret to have again occasion to trouble you, by calling the attention of Mr. Greaves to his incorrect statement of facts.

Commentary or criticism upon the actions of public men we agree to regard as justifiable, but truth plain and unvarnished in matters of fact ought ever to be before the minds of all who write for the public information.

The statement in parenthesis in Mr. Greaves' letter in this month's Journal referring to myself is not correct. I both seconded Professor McCall's motion for an increase in the number of examiners, and voted in the minority when that motion was reconsidered at last meeting of Council.

I would again counsel Mr. Greaves that, when he has any charge to make against men, individually or collectively, to remember that statements made are expected to be strictly true, both in a general sense and in minute particulars.

Yours obediently,

W. ROBERTSON.

THE PRACTICAL EDUCATION OF VETERINARY STUDENTS.

SIR,—Veterinary students ought to be deeply indebted to you for inaugurating the recent discussion on the practical training in the different colleges. Students are placed in a very false position when they expect that, by obtaining a sufficiency of practical knowledge to satisfy the Board of Examiners of the Royal College of Veterinary Surgeons, they can go on their ways rejoicing; it is when they go before the great board of examiners, the public, that they find how cruelly they have been deceived. The student who has not had, before going to college, the privilege (as some of us happily have had) of seeing the different phases of the veterinary profession under the watchful eye of some eminent practitioner, must put his trust in the training to be received at college. Such a one may form a very high opinion of himself when told by his examiners that they have "found him fully qualified to practise the art and science of veterinary surgery and medicine," but sooner or later it will dawn upon him that he is sadly wanting in that practical knowledge so necessary to the veterinary surgeon.

Numberless instances could be related of the lamentable ignorance of the most simple practical matters shown by students, who a few days later, obtained the diploma of the Royal College of Veterinary Surgeons. It might be called exaggeration to state that to my own knowledge the internal malleolus of the tibia was pointed out as the seat of Bone Spavin, and the point of the os calcis as the seat of Curb! the dose of calomel for the horse four drachms to an ounce, while the absurd guesses made as to horses' ages were astonishing.

Where must the blame for this state of affairs be placed—on the students, on the Examiners, or on the teaching schools? Not on the students, for the majority of them have made the best use possible of their college "practical" training; nor on the Examiners, for heretofore they could not in conscience reject men for the want of that knowledge for which no opportunity was afforded of acquiring.

It behoves, then, our governing body, the Council of the R.C.V.S., to speak out in no uncertain voice, and determine that no longer shall students suffer such injustice, nor the public be imposed on so flagrantly.

A veterinary surgeon requires to be something more than a mere automaton to diagnose and treat diseases; he must be acquainted with the different points and shapes of the various breeds and classes of horses, cattle and dogs, and be able to converse with his clients on the merits or demerits of their studs—of course I do not mean to convey that all this is to be acquired during the college career, but at least let it be demanded that the age of the horse as shown by his teeth may be lectured on, and that certificates of soundness or unsoundness be written *every day* by senior students, not, as recently, once during the session.

It may be remarked that it is very easy to criticise and find fault, but that it is the proposition of remedial measures that is required. The onus of introducing reformation rests in abler and more experienced hands than mine, and it is only as being a comparatively recent graduate of the Royal College of Veterinary Surgeons, and therefore in a position to give an opinion on the present practical education of veterinary students, that I write to say that I thoroughly concur with your editorial remarks on the subject.—Yours very faithfully,

B. A. CLANCY, M.R.C.V.S.,
Assistant Veterinary Surgeon to T. D. Lambert, F.R.C.V.S., Dublin.

VETERINARY EDUCATION.

SIR,—It is with *very great reluctance* I take up my pen to join in the "wordy war" going on at the present moment in this Journal, which was, I believe, established with the object of improving the profession; whether

to be carefully examined, his several defects detected and explained, together with sufficient questioning on matters practical generally, and the Council and every one tacitly believing the test was all-sufficient to prove a candidate fully qualified. In the members of the former Board, as in those of the present, it is my pride and happiness to know in each one an old familiar friend, many contemporary with myself in professional career. I was invited to act as examiner during the latter part of the term of office of the old Board, and can testify there is not a pin to choose as to individual fitness for the duty. It was six of one and half-a-dozen of the other; but the former Board was fettered in its function, and the scope altogether inadequate. What had been the system on the early introduction of the "practical" is the system now; each student is examined for at least twenty minutes, but not limited thereto, separately by each of the two examiners—being *three* students in the hour instead of *six*. In the first half the student is free to examine uninterruptedly in his own way, under the observation of the examiner, a horse as to soundness and general defects, to point them out, and be questioned thereon. He then passes over to the second examiner, to be questioned on one, two, or three horses, as may be desirable, and on other practical details; and there again as much time or more is devoted as embraced the entire test under the old rule. So long as the examiners, with conscience void of offence, have known that they have done their duty with painstaking, honesty, and impartiality, I believe, individually or collectively, they have cared little for the tittle-tattle of inuendo, begotten of vexation and disappointment at the increased percentage of rejections at the more recent examinations.

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SIR,—Veterinary students ought to be deeply indebted to you for inaugurating the recent discussion on the practical training in the different colleges. Students are placed in a very false position when they expect that, by obtaining a sufficiency of practical knowledge to satisfy the Board of Examiners of the Royal College of Veterinary Surgeons, they can go on their ways rejoicing; it is when they go before the great board of examiners, the public, that they find how cruelly they have been deceived. The student who has not had, before going to college, the privilege (as some of us happily have had) of seeing the different phases of the veterinary profession under the watchful eye of some eminent practitioner, must put his trust in the training to be received at college. Such a one may form a very high opinion of himself when told by his examiners that they have "found him fully qualified to practise the art and science of veterinary surgery and medicine," but sooner or later it will dawn upon him that he is sadly wanting in that practical knowledge so necessary to the veterinary surgeon.

Numberless instances could be related of the lamentable ignorance of the most simple practical matters shown by students, who a few days later, obtained the diploma of the Royal College of Veterinary Surgeons. It might be called exaggeration to state that to my own knowledge the internal malleolus of the tibia was pointed out as the seat of Bone Spavin, and the point of the os calcis as the seat of Curb! the dose of calomel for the horse four drachms to an ounce, while the absurd guesses made as to horses' ages were astonishing.

Where must the blame for this state of affairs be placed—on the students, on the Examiners, or on the teaching schools? Not on the students, for the majority of them have made the best use possible of their college "practical" training; nor on the Examiners, for heretofore they could not in conscience reject men for the want of that knowledge for which no opportunity was afforded of acquiring.

It behoves, then, our governing body, the Council of the R.C.V.S., to speak out in no uncertain voice, and determine that no longer shall students suffer such injustice, nor the public be imposed on so flagrantly.

A veterinary surgeon requires to be something more than a mere automaton to diagnose and treat diseases; he must be acquainted with the different points and shapes of the various breeds and classes of horses, cattle and dogs, and be able to converse with his clients on the merits or demerits of their studs—of course I do not mean to convey that all this is to be acquired during the college career, but at least let it be demanded that the age of the horse as shown by his teeth may be lectured on, and that certificates of soundness or unsoundness be written *every day* by senior students, not, as recently, once during the session.

It may be remarked that it is very easy to criticise and find fault, but that it is the proposition of remedial measures that is required. The onus of introducing reformation rests in abler and more experienced hands than mine, and it is only as being a comparatively recent graduate of the Royal College of Veterinary Surgeons, and therefore in a position to give an opinion on the present practical education of veterinary students, that I write to say that I thoroughly concur with your editorial remarks on the subject.—Yours very faithfully,

B. A. CLANCY, M.R.C.V.S.,
Assistant Veterinary Surgeon to T. D. Lambert, F.R.C.V.S., Dublin.

VETERINARY EDUCATION.

SIR,—It is with *very great reluctance* I take up my pen to join in the "wordy war" going on at the present moment in this Journal, which was, I believe, established with the object of improving the profession; whether

such productions as many of those which have recently appeared in it will tend to do this must be left to a wiser head than mine to determine, but I may be allowed at least to express some doubt on the subject.

Occupying the position I now do relative to the body corporate, I would much rather have seen a discussion initiated upon some useful subject, and one in which I could have joined heartily, than upon that under consideration; for, however much we may "air our notions" in print, we shall still find that doctors will, like other human beings, differ, not only in the matter of doctoring, but on general subjects also. But while this is so, I cannot sit still under the grossly unjust and illiberal attacks which have been made upon myself in common with my Scotch contemporaries. I should not only be something less than human, I should not be a Briton could I do so.

The Journal of December—and, to some extent, of November also—was devoted to the offering of advice to the teaching schools, which, to use the very mildest term, savoured strongly of puerility; and could one have closed one's mental vision while reading this advice, one might be pardoned if he came to the conclusion that he was living in the seventeenth or eighteenth, instead of in the nineteenth century.

The writers of the letters in the current number of the Journal seem to have gone on a different tack, and now a volume of abuse is poured out upon our devoted heads by men (fain would I use the term gentlemen, but I cannot apply it to anonymous writers) who have not the courage to father their own creations.

To read these productions, one would think that the teachers were bound "in the very bonds of sin," and that the schools were "sinks of iniquity"—verily a Nazareth, "out of which no good can come." We are charged with being "*obstructionists*" of the blackest type; as "being ready to sacrifice the interests of the profession to our own private interests"; as "ready to open our doors to all and sundry, literate and illiterate"; as "desiring to *pitchfork* unworthy and incompetent men into the profession"; as "instigating opposition to all useful measures," etc., etc. Such charges I can only characterise as *vile slanders*, worthy only of the members of a communist club.

Let it be understood that I will not act as the sponsor of other men's utterances; I am responsible only for my own, and I will say, that if I had in the past been guilty of all these things which are charged against me, it seems to me a remarkable thing that such a "monster of iniquity" should have been elected to the post (unsought after) I now occupy; and if I have so betrayed the best interests of a profession, to the advancement of which I have devoted my whole life, for whose welfare I have been always very jealous, neither looking or hoping for any other reward than that of a good conscience, defending it against all extraneous attacks, and gaining infinitely less from it than can be and has been gained by many a skilled artisan, then, I say, let my professional brethren use the opportunity which will be shortly given to them of relegating me to the limbo of obscurity: I shall be quite content if it is their will. Had I in the past consulted my own personal and selfish interests, I should have voluntarily embraced that obscurity, and should have profited by it, but I have one consolation—viz., that the vast majority of my professional brethren, if I mistake not, do not misunderstand me, nor do they undervalue my efforts.

But there is another aspect of this whole question which I cannot overlook, and that is, the influence which must necessarily be exerted, directly or indirectly, upon my position in this institution if all that is said of me be true. Let me call to mind the old and trite saying, that "He who steals my purse steals trash, but he who robs me of my good name," etc., etc. Well, sir, my good name is my only possession, and I may be pardoned if I think it

necessary to defend it, even though in the light of recent events it may seem unnecessary that I should do so.

That I have done my duty to my pupils I have more than once been substantially reminded; that those to whom I am responsible for doing my duty to the institution I direct are satisfied with my work is tolerably evident, seeing that I have more than once received public and, on many occasions, private acknowledgment thereof. That I have done my duty towards those who have honoured me with their confidence by entrusting their sons, brothers, pupils, and wards to my care is also plain, seeing that I still, as largely as a man can ever hope to do, retain their confidence; as for the rest, let the future speak for itself, and although I have not been assisted by all the advantages possessed by some other kindred institutions—had no huge livery stable at my back—I can look forward with confidence to the future position of those whom it has been my privilege and my pleasure to educate.

Now, sir, I am not going to imitate the example set in your Journal of "throwing mud"; such an occupation usually leads to the bespattering of those who throw it as well as of those at whom it is aimed, and I must express my great regret if I am compelled in some measure to expose the skeleton which is hidden in our own cupboard: on the whole, however, I shall confine myself to facts, and to queries based on facts.

Dealing first with the recent movement initiated by the colleges to add to the number of examiners on the final section of the Board, let us see in what it had its origin. If you refer to the address I delivered to the Scottish Veterinary Medical Association, in February last, you will see that I honestly directed attention to what I considered were its defects. My main contention being that it was not a representative Board, and I further expressed my inability to understand how it was that the percentage of rejections was uniformly so large, and the percentage of honours so low. I spoke of this in more than one conversation with Dr. Fleming, and in doing so directed his attention to the fact that if I had the powers of three men I could do no more for the students than I was then doing, and that the results of the examination were extremely disheartening and discouraging. The outcome of those conversations was the suggestion that the Examining Board should be enlarged, and that, in equity, seeing that there were three teaching schools in Scotland and only one in England, two Scotch practitioners should be added to the Board, and, inasmuch as there was no Irish representative in it, one or more practitioners from Ireland should also be selected. By this means, it was hoped, a more representative examination would be obtained, and the onus of the rejections would be more widely distributed; in the end Professor McCall's motion was brought forward, with the result that it was first accepted by the Council (at the October meeting) with only three or four dissentients—two of them Examiners—and not only so, but the election was proceeded with, although, as it unfortunately turned out, it was not legal as, owing to a misapprehension on my part, notice of the intended election was not given in the usual manner by the Secretary. The resolution to add to the number of Examiners was, however, legal, as the profession will learn from the explanation given by myself to the Council at the last meeting. Notwithstanding the practical unanimity of the Council to enlarge the final section of the Board of Examiners, a most remarkable change had, in the interval between the two meetings, been wrought in the minds of many members of Council, with the result that the resolution arrived at on the occasion of the first meeting was entirely overthrown at the last. Now, sir, there are two remarks bearing on this subject in the letter of Dr. Fleming which I cannot allow to pass without comment. The first is to the effect that "the principals display less zeal for Scotland and Ireland in the Council-

room than they do in the class-rooms." Let us see how far this bears the impress of truth. In talking the matter over with Professors McCall and Williams, I pointed out to them that there was no representative of the Glasgow College on the Board, and it was consequently arranged that Mr. Campbell should be nominated, and with him Mr. Borthwick; this was done; the result being that the latter gentleman received a large measure of support, the former very little. As to the other gentlemen nominated, it was made known to us that there was a widespread desire to see Mr. Woods on the Board as an examiner in cattle, and also either Mr. Harpley or Mr. Cartledge (seeing that they had been Examiners previously) as an Examiner in horse pathology; to these gentlemen we could have no objection, especially in the case of Mr. Cartledge and Mr. Woods, who were old and well-known practitioners residing in northern counties.

The question of putting in an Irish representative was also discussed, but we were in this predicament, that we did not know who to nominate (we had taken steps to discover who would be most acceptable, but without success), and as I had written to Mr. Simcocks, telling him that the election would be proceeded with, I suggested that the matter should be left in his hands; unfortunately he was not present at the meeting.

The second remark of Dr. Fleming's is to the effect "that the council-room is the place where the principals should lay their complaints and suggestions for discussion." Have we not done this? and, as will be shown by the remarks made in introducing and supporting the motion, in as moderate and conciliatory a manner as it was possible for us to do it? We avoided all personalities, we made no charge against any person; had this been done I should, from the chair, not only have withdrawn my support, I should have peremptorily repudiated such conduct; and while I have the honour of occupying that chair I shall deem it my duty to suppress the introduction of such matter into the discussions of the Council.

Dr. Fleming has made other statements which I cannot allow to pass unnoticed, these are to the effect that "the cause of the heavy percentage of rejections is due to a want of practical knowledge on the part of the students," and "that no competent student is rejected." In answer to the first assertion, I repeat the remark made by Mr. Pemberthy, that *a very large percentage of the rejected men are what are usually designated practical students;* and more, *they are rejected in the practical part of the examination; not once, but twice or thrice.* In reference to the second assertion, I may be allowed to remark that however incompetent many of these men may be in the eyes of their Examiners, a large percentage of them are so competent in the estimation of their teachers and preceptors as to lead them to entrust them with the performance of very important duties, and to look upon them as quite qualified to practise the art and science of veterinary medicine and surgery, even though they have not been fortunate enough to obtain the diploma of the R.C.V.S. Where, then, does the fault lie? Teachers and practitioners in common are condemned by the Examiners. To what tribunal is the student to appeal? There are no assessors as in the Medical Boards, and no person to say whether the Examiners are right or wrong; plainly, somebody must be wrong. If the teachers err, the students will discover their blunders in after life; if the Examiners, the effect on the student's fate is irreparable.

Let it be observed also *that no Examiner on the final section of the Examining Board has, as yet, written a text-book on the subject upon which he examines; neither in the past has there been anything in the shape of a syllabus to form a guide as to what subjects are examined upon at the different tables.* Doubtless it would be a bad day for the profession if it were bound blindly to follow the dictates of one or two men who considered themselves authorities in particular subjects; but although they would degenerate into

mere cramming machines, teachers would have the advantage of knowing what was expected from their pupils if a text-book were prepared by each Examiner.

Dr. Fleming has referred to the fact that the principals of the schools are often found opposing each other in courts of law. I can only say, personally, that I have never appeared in opposition to a veterinary surgeon in a court of law without feeling that I was right; and I have frequently endeavoured to get cases in which I have been engaged settled out of court by arrangement or arbitration. And does the charge hold good only in the case of the principals? Let the records of the law-courts in England as well as Scotland answer; and not only the law-courts, but the records of show-yard disputes. I leave this in the hands of my professional brethren, against whom, personally, Examiners have been sometimes known to appear in the witness-box.

Dr. Fleming, again, charges me with being desirous, by the aid of a motion recently before the Council, "to turn adrift those students who have failed in their practical examination to find their education where and how they may;" "to pass them by instalments," or, as one of your correspondents elegantly expresses it, "to *pitchfork* them into the profession." This is a most unjust charge, and, I will add, ungenerous too; the origin of that motion was not in the present, it had its birth in the distant past, and let me recall to Dr. Fleming's mind the fact that the motion was originally adopted by a very large majority of the Members of Council, but it was not, unfortunately confirmed at the time; consequently, when the time came for its confirmation, it was rejected in the same remarkable fashion as the resolution to increase the Examining Board has been rejected since. Does Dr. Fleming mean to arrogate to himself the position of sole arbiter and dictator in such matters? Are other men who love their profession every whit as much as he not to be allowed an opinion? I shall, at any rate, so long as I live, claim the right to hold one equally with any other member of the profession. Why was the motion to disjoin the practical from the oral brought forward? Simply to do away with the anomaly of pitching a man backwards and forwards—like a shuttlecock between two battledores—between the two parts of the examination; and in the event of his passing the latter, and failing in the former, to give him a chance of going away, if he wished, to improve himself in the subjects thereof. This motion was not originated "to enable the schools to turn over capital quickly," as has been so meanly suggested by one of your anonymous correspondents; if this were so, we should be pleased to see these men come back to us, as by so doing we should be constantly adding to our incomes, and let me tell those who make such assertions, that to me the return of old students within the walls of this college is a painful sight, when, as frequently happens, I feel they should not have returned; further than that, as I have before stated, the adoption of the motion would have done away with the farce of Examiners going on with the examination of students (and receiving fees for so doing) whom they know are already rejected. The Highland Society's Examining Board did not do this; on the contrary, men were honestly told that they were rejected, and would not be allowed to present themselves for the oral.

But it may be urged, and has been urged, a man who has paid his fees has a right to demand the whole examination. Would any man in possession of his senses elect to go through the farce of sitting for an oral examination, knowing that he had been previously rejected in the practical? The argument is disproved by this fact that sometimes men who are aware that they have done badly in the practical, refuse to go up for the oral examination.

Sufficient, however, on this subject. Let us glance for a moment at another string upon which some of your correspondents, as well as the Editor, have been harping, viz., practical *versus* theoretical training. I defy

anybody, at the outset, to say that I have ever decried practical training ; I have always advocated it, but in a different manner, and at a different period in the student's career, than those who have written so strongly on the subject, and whose mental vision will only enable them to see one side of the question ; and I further defy any member of the profession to show that I have ever led any student to suppose that practical work is not necessary for a successful prosecution of his studies. My reasons for opposing the pupilage clause I have already given on more than one occasion, and my main reason is that, were it brought into force, it would effectually prevent many good men from entering the profession who otherwise would do well in it, and be an honour to it, and become leading lights in it. And, I would ask, where would many of those who now occupy, and have occupied, good positions have been if all the inabilities and disabilities some would have us heap upon students had been in force in their day? I have said before, and I repeat it here, that a student who has not been much engaged, or not at all, in the active practice of the profession prior to entering college, is more likely to settle down steadily to his studies, and to continue to prosecute them after he has obtained his diploma, than one who has been engaged in a prolonged pupilage. This is no theoretical statement ; it is a fact proven by the greater number of those of the former class, as compared with the latter, who attend university classes and obtain university degrees. And I further assert that those young men with whose training I have had to do, who have followed my advice and have mixed practice and theory together from the outset of their career, occupy better and more important positions to-day than do those who have adopted a different plan of educating themselves ; and, what is more, the majority of those who are in the employment of veterinary surgeons are thought as much of by their employers as are others who are looked upon as purely practical students. There are good and bad of all kinds, and there are practical and theoretical students of whom neither professors nor practitioners will ever make anything good.

One of your correspondents has said that "if a young man goes as a pupil with a veterinary surgeon for a year or two, he will find out whether or not he possesses the necessary qualifications for a veterinary surgeon, and if he finds that he does not will seek some other calling more suitable to his capabilities." Let me tell the author of that assertion that, for every practical student who thus finds out his mistake, and retires from the prosecution of his studies, there are ten theoretical students who do so ; the former goes on hoping against hope, the latter recognises his weakness and gives in ; the consequence being that in the great majority of cases the hopeless students are largely composed of old pupils and the sons and relatives of professional men. These statements are based on facts, of the verity of which I can show proof if it is required. I know that some theoretical students do not see practice outside the college, but they are few, and they are not always to blame; as they rightly say, practitioners to whom they apply ask prohibitory premiums. There are, I am happy to say, many practitioners who form a marked exception to this ; and I here heartily thank those who have voluntarily taken my pupils, and afforded them a chance of improving themselves at a moderate premium, or, as is often the case, in return for their services.

It is too much the fashion to pounce down upon students for their shortcomings. We do not always acknowledge our own, and I venture to affirm that there are mistakes made by practitioners that would not be made by students. Certainly if any pupil of mine got into the witness-box, and stated that "the germs of Sheep Rot were disseminated by the atmosphere," I should feel very much inclined to kick him ; and while I do not wish to make invidious comparisons, I would ask if the article by Dr. Abrahams on

"Dislocation of the Shoulder Joint," in the December number of the JOURNAL, was inserted as a "grim satire" upon the acumen of the practitioner of veterinary surgery? Dr. Fleming has drawn attention to the fact that "fifty per cent. of the graduates who present themselves for the army examination fail in the practical." I am in a position to state that many of my old pupils who have been most successful in that examination, and who have given the greatest possible satisfaction to their superior officers, are young men who were educated in the manner I have so strongly advocated; and further, that many of those who most egregiously fail are young men who have had infinitely better chances of becoming acquainted with the practical details of their profession. Again, there are many veterinary surgeons who have followed my advice in the case of a son or a brother, in preference to giving him a prolonged practical training prior to his entering upon his scientific studies. Examinations are not always the true index of the abilities of students, and were fifty boards organised to examine the same set of men the verdict would be different in each case.

In drawing this lengthy epistle to a close, I must reiterate the statement I have already made, viz., that I regret exceedingly the tone which this discussion has assumed, and the necessity I have felt to join in it; but I should not have done my duty to myself and the institution I represent had I allowed so many one-sided and unjust statements to pass without notice; neither should I have felt that I had done my duty by my pupils, whose natural defender I take myself to be. For worthless pupils, I feel neither pity nor concern in their misfortunes; they only get what they seek; but in the case of those who earnestly strive to reach the goal, and to make themselves perfect in their profession, I acknowledge that I do most profoundly commiserate them in their misfortunes, and so would others had they seen them suffer, as I have done, often in the extremity of anguish and despair, from the sudden and unexpected ruin of their fondest hopes.

Perhaps—though I would fain do so—it is too much to hope that now the discontented ones have blown off their superfluous steam, matters will be allowed to settle down quietly, and that all will work together towards the realisation of the proud motto of our college, and towards making our professional journals what they were (I take it) instituted for—channels of instruction and a means of mutual improvement.

Edinburgh, *January 15th*, 1885. THOMAS WALLEY.

VETERINARY JURISPRUDENCE.

SIR,—In answer to "Justitia" (in January's Journal), a registered practitioner is *not* justified in calling himself a veterinary surgeon, and by taking or using that designation he renders himself liable to a penalty not exceeding twenty pounds.

The evidence of the so-called veterinary surgeon would not be admitted as professional evidence in any case. If "Justitia" would get the Act of Parliament, and read it for himself he would find out what penalties were laid down, but which, be it regretted, have never been put into force.

The Ed. V. J. ought to peruse the Act before so dogmatically laying down the law on this question. I refer him to clauses 16 and 17 of the Act for instruction, and trust he will be good enough to correct such gross errors in next publication. I am sorry the Council have not seen fit to prosecute those who have assumed a title which they have no right to use, and which is too often abused. "SEMPER PARATUS."

[We thank our correspondent for so courteously inviting us to read the Veterinary Surgeons Act. We had carefully done so when it was a Bill, and have had to study it frequently since it became law, and our reply to

"Justitia's" question was perfectly correct. Clause 16 prohibits any one adopting the title of Fellow or Member of the Royal College; and clause 17 prohibits any person whose name does not appear on the Register of Veterinary Surgeons from designating himself a Veterinary Surgeon, or a Practitioner of Veterinary Surgery. Existing Practitioners being on the Register, cannot be punished for calling themselves Veterinary Surgeons. This must be evident to every one who peruses the clause. The evidence of unqualified veterinary surgeons has often been accepted in a court of law, before the passing of the Act.]

"FELLOWSHIP"—"THE NATIONAL VETERINARY MEDICAL SOCIETY," ETC.

SIR,—Into the low region of personal remarks and misrepresentation I shall not follow your correspondent. In defence of my own statements allow me a few words.

The Fellowship degree is one subject. The investing of the Fellows with the sole management and honours of the profession is another. The first, if properly carried out, has the good wishes of every one. The latter, it is the duty and the privilege of every member of the Body Corporate to examine and criticise. I have only exercised that privilege.

Fellowship.—The fact stands out broad and plain still that in round numbers there are "100 Fellows and 1900 Members, R.C.V.S.," and that in 1886, Fellows only shall be eligible as Councilmen and Examiners. The "traversing" of a host of anonymous correspondents cannot disguise or undo that fact. And that this arbitrary decree deserves all the hard terms that can be applied to it, is as plain to me as before.

"Wherein consists the superiority of this 100 Fellows—that they should be sole Examiners and Councilmen?" They form but a small part of the profession, and are apparently of four classes.

I. Men in attainments of well-known high standing—the only men in my opinion who should be Fellows. Some of our best men, however, are not Fellows. The P.R.C.V.S., some of the lecturers of the schools, a few of the Examiners, and a large number of better-class private practitioners are outside the charmed circle, and can only enter it by examination. The shutting out next year of such men is surely an unnatural arrangement—their appearance before the Fellowship Examiners, "comedy" in reality.

II. The men who by careful preparation pass the examination creditably and well. Men in every way to be respected, only it is possible and probable that their scientific knowledge, having been suddenly and rapidly increased for the avowed object of passing, may, after that object is attained, be as suddenly and rapidly dissipated, and the men though Fellows be really no better than when members.

III. *Accidental Fellows.*—Sixty or seventy men place F.R.C.V.S. behind their names, simply because they were members of the profession fifteen years prior to the Charter of 1876, and paid the fellowship fee. And how the date of a diploma and a fee makes such men better than their neighbours, I fail to see. No great objection to their being First Fellows, but every reason surely against their being Examiners and on the Council, to the exclusion of other and as good men who entered at a later stage.

IV. The men who, rubbing up their College knowledge, present themselves with considerable trepidation, or with confident, plausible exterior, trusting that, as they are well-known and very fair practitioners, or "most promising young fellows, whose general and professional knowledge is most satisfactory," and have come early to the bridge, they may get easily over. "Incompetence" in the Examiner who retired? Say rather, that the excellence of some

of the "Fellowship" candidates was not up to this Examiner's standard, and sooner than pass or reject such men he resigned.

Against the Fellows personally, and individually as members of the profession, I have not one word to say—their general excellence I freely admit—but when as Fellows they stand out as men of a higher order, claiming Council and Examining Board as their exclusive right—what just claim, in all reason, have they on their side? Has this degree, with or without examination, really and truly made all of them superior to all others around them? Let the Fellowship Examiners take up the letter of your correspondent "F.R.C.V.S." in your last issue; let the members of the profession read his anonymous epistle, without name, place, or date—its coarse personalities, misrepresentations, levity, and general obtuseness; and ascertain for themselves whether this "F.R.C.V.S." is a being of a superior order—a higher kind of veterinary surgeon, a fit Councillor and Examiner, an ensample of manliness and gentlemanliness. "Wherein consists the superiority" of this "Fellow"? Why should good men stand aside for such as he? "May the profession be preserved from *such* 'Fellows.'"

Clause 9, Charter 1876, is short but significant. Has the profession become ripe for this "*radical*" change? Ten or twenty years hence, there *may* (?) be a race of Fellows, whose "superiority" will be "apparent" and to whom council-chamber and examining-room may be confided. In the year "1906 possibly, not certainly in 1886." In my humble opinion, however, a good, right-thinking, straightforward member will *at all times* make as good and a better Councilman and Examiner than a possibly more brilliant and accomplished, but it may be erratic, or, on the other hand, low "Fellow."

The National Veterinary Medical Society.—As a member of this Society—and one who finds that to London and Manchester must be but on rare occasions—I do not believe that the Society is not wanted in Scotland. There are many men here, not members, who I believe would welcome the Society warmly, and do their best to make its visit pleasant and agreeable. While not approving of the action of Scottish practitioners as a class in standing aloof from the Society, and knowing the difficulty there is in getting many to attend even local meetings; these gentlemen have, I admit, a right to their opinions, they know their own feelings and circumstances. I trust that better counsel than that of your correspondent may prevail, that the Society after having two or three successful meetings in England may have one soon in Scotland, and that by diffusing good feeling and fresh ideas may find "new and warm friends and do national good."

This "F.R.C.V.S." tells us at the end of his letter "to send Scotchmen" to Council. Will he kindly tell us how? We tried in 1881. Our "luminary," the Principal of a school, succeeded; our "good private practitioner" failed. We tried again in 1883, with two as "good men" as we could find—Scotchmen, who had done long and good service in their profession and were well worthy of a seat in Council; these men were left out in the cold; five London men and one Lancashire man walked into the Council. We tried two "luminaries" last year, Principals of Scotch Colleges, and succeeded. This year we have the P.R.C.V.S. and a good Scotch practitioner along with the representative of the North of England Society. The "luminary" will probably be elected; the fate of the others is doubtful. Even if the three succeed, two of them, not being Fellows, will I presume have to walk quietly out of the Council next year. The "comedy" is on the other side. The words of my letter are true:—"A good man North can scarcely get a seat in the Council, a man no better in London is almost sure of election; a man from Scotland must be a luminary (a head, a shining light)—a state of incandescence (a fairly good practitioner) suffices from the South." I see no "comedy" in a Council constituted on the Parliamentary system—a Council fairly

representative of the practitioners of the three kingdoms; but I have long seen the "comedy" and the bad effects of twenty or thirty Southern men calling themselves the chosen representatives of the veterinary surgeons of England, Scotland, and Ireland, and the "comedy" of a dozen Southern men coming over the border as sole Examiners of the pupils of Scotch colleges and the sons of Scotch practitioners.

This "F.R.C.V.S." mentions the Highland Society, too. The men at the head of the profession at the present moment are almost to a man graduates of the Highland Society. The eight hundred and eighty "Existing Practitioners" and quacks now on the Register are almost to a man on the other side of the border. I make this statement in no "acrid" spirit. The Registers attest its truth. If the Highland Society by sending out men fitted for the requirements of the country, and if the Scotch practitioners have so conducted themselves that quackery in Scotland is reduced to a minimum, their example is worthy of imitation.

The question has yet to be solved, how far the well-educated, good-looking, gentlemanly young fellows now seen in Scotch colleges, will equal or excel their plainer, rougher, homelier, but very earnest predecessors, who were so proud of their Highland Society certificate—the men of 1840, '50, '60, and '70. When a Shorthorn or polled Angus breeder's heifer is calving, the man of worms and monstrosities may not be his best friend. When a piece of turnip or potato has to be removed from an ox's gullet, the lily-handed pathologist and microscopist may be somewhat at sea. In a stable with Influenza, Pneumonia, and Pleurisy; in a dairy with Pleuro-pneumonia; in a district with Foot-and-mouth Disease; in an examination for soundness, beside an everted uterus, a Colic case, Quittor, a pricked or cankered foot, the man of so-called education, science, and gentlemanly demeanour may after all *not be the best* man; the shrewd, plain, common-sense Highland Society man may be *the better veterinary surgeon* of the two.

When a good Highland Society man dies out of his district, and his place is taken by two younger men adding M.R.C.V.S. to their names, are the clients better pleased, the public better served? Let this "Fellow" without a name inquire.

Far be it from me to undervalue the advantages of superior education, other things being equal; but it is possible that matriculation examinations —however simple—increased fees, a lengthened curriculum, and stringent examinations may have driven from the colleges many sons of blacksmiths, farmers, horsemen, and even of veterinary surgeons of limited means, and placed in their stead young men of better position and higher education—sons of tradesmen, merchants, gentlemen even, and clerks in variety. Which is the better raw material for the future veterinary surgeon? Take the good old-fashioned student of Professor Dick's best days. He needs no set term of pupilage. Shower on him the now greatly-increased advantages of the schools, and at "the Final," instead of five out of thirty men, reject ten or twelve. The result will be, so far as I am able to judge, eighteen or twenty veterinary surgeons whom the country will welcome, of whom our colleges and our examiners need not be ashamed; but with young gentlemen who know little of horses and cattle, who touch their tails and feet but seldom, to whom cows, calves, sheep, and pigs are wild and strange animals, three years of pupilage, three years at college, "Fellows" as examiners, no better, if so good, veterinary surgeons at the end.

Apologising for the length of this letter,

I am, sir, yours very truly,

Slateford, 15*th January*, 1885. C. CUNNINGHAM.

FARMERS AND VETERINARY SURGEONS.

SIR,—May I offer "A Country Vet." a crumb of comfort by suggesting that he has over-estimated his clients' credulity in supposing that they would prefer to treat their animals on Professor Brown's printed recommendations rather than avail themselves of the services of a competent practitioner at hand? If the publication of works of this kind could deprive us of our pittance, we should have been relegated to the workhouse long ago, since there is no Institution for decayed "vets."

If we fear such competition as pamphlets and nostrums, are we not wanting somewhat in self-respect? It has been my experience that those owners of animals who attempt in a leisure hour to acquire the knowledge we have obtained by years of study and devotion only open their eyes to the vastness of the subject, and make up their minds to employ the best men. Where the professional attendant has the tact to allow such clients to air their superficial attainments and, to an extent, take them into his confidence and lead them out of their depth, they eventually become the best and cheapest of advertising media.

Again, I would suggest that not one client in a hundred has ever heard of Professor Brown, nor do the public generally speak of professors with the bated breath of students. We are all professors in our clients' eyes, and too much so very often.

If high scientific attainments like those of the professor in question could bring with them implicit confidence in all an individual writes and says, and ability on the part of farmers to diagnose cases, there would be no longer a living for men of average attainments; but such is not the case. The inherent conservatism of the country makes men place their faith in those they know; and where they know a man as a successful practitioner they care nothing for diplomas or professors; and if we could lay aside our professional cant and personal jealousy, we should have to admit that farmers are best served by their own rough and ready selection.

There is another safeguard against the rampant quackery "A Country Vet." complains of, and that is the sense of dependence that owners feel on the assistance and goodwill of their "vet." They know that, however sanguine, the dark night will come when Mr. Dash's services will be required to calve a cow or perform some other onerous and not too remunerative operation, and a spirit of fairness as well as self-protection induces the stockowner to give his "vet." some of the rough and some of the smooth (I am now speaking of the country proper, not the Londoner's country, which is everywhere outside the metropolitan district); and those who live in a thinly-populated district know whenever a bullock dies or an accident occurs, and the man who uses Day's drinks in the sunshine may be referred to them on a dark night when Mr. Dash would rather remain in bed.

East Grinstead, Sussex. HAROLD LEENEY, M.R.C.V.S.

VETERINARY INSPECTORSHIPS.

SIR,—As the lamentations of disappointed members of the Royal College of Veterinary Surgeons find expression in your journal from time to time, I venture to make my complaint, as I believe it is unique of its kind. Wherever I have lived, the veterinary inspector has been an unqualified practitioner; but in the district of East Grinstead (a very large one) the person holding the appointment keeps a tobacco and druggist's shop, and does not practise

outside this shop except when called upon to inspect for the authorities or give evidence in police or cruelty cases.

As the person before referred to neglected to register under the Veterinary Surgeons Act, I should like to know, sir, whether a defendant cast in costs at the police-court, could not refuse to pay either the half-guinea for examination or the subsequent half-guinea for professional evidence before the magistrates.

Country practitioners like myself may recognise the future good to be anticipated by the Act, but it certainly requires a robust faith to believe in the advantages it confers on the present members.

East Grinstead, Feb. 9th, 1885. HAROLD LEENEY, M.R.C.V.S.

[Non-registered practitioners cannot legally enforce their claim to a fee for professional services, and any one may refuse to pay them for such services. Such men should not be employed as inspectors. ED. *V.J.*]

TO CORRESPONDENTS.

COMMUNICATIONS from Messrs. R. H. Dyer, J. S. Hurndall, W. P. Adams, Leather and Sons, and others, with the report of the Midlands Association, will appear in our next. Mr. Greaves's letter came too late for the present issue.

It is requested that secretaries of societies will condense their reports as much as possible in order to ensure early publication.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from R. McConnell, Castle Douglas; "Semper Paratus"; J. Donald, Wigton; C. Hartley, Lincoln; R. Poyser, A.V.D., India; B. A. Clancy, Dublin; A. J. Hill, London; R. Pringle, A.V.D., Bengal; Professor Walley, Edinburgh; T. Greaves, Manchester; A. Spreull, Dundee; H. Leeney, East Grinstead; Professor W. F. Garside, Cirencester; J. Roalfe Cox, London; Professor Robertson, London; "Searcher"; Messrs. Gresswell, Louth; J. D. Overed, Blofield; A. Broad, London; J. Harrison, Westmoreland; R. Rutherford, Edinburgh; T. Runciman, Market Deeping; E. Beddard, Wolverhampton; F. Smith, A.V.D., Bangalore; W. Broughton, Leeds; H. L. Simpson, Windsor; W. P. Adams, Ossoor; A. Macgillivray, Banff; R. H Dyer, Limerick; J. S. Hurndall, Liverpool; A. Barron, Liverpool; Messrs. Leather, Liverpool.

BOOKS AND PAMPHLETS: Encyklopadie der Gesammten Thierheilkunde und Thierzucht; Contagious Diseases of Animals—United States Department of Agriculture; State Measures for the Direct Prevention of Poverty, War, and Pestilence.

JOURNALS, ETC.: *Journal of Comparative Medicine and Surgery; American Veterinary Review; Wochenschrift für Thierheilkunde und Viehzucht; Scottish Agricultural Gazette; Maryland Farmer; Quarterly Journal of Veterinary Science in India; British and Colonial Druggist; Der Thierarzt; Lancet; British Medical Journal; Live Stock Journal; Mark Lane Express; Animal World; Annals de Médecine Vétérinaire; Revue Vétérinaire; Repertorium für Thierheilkunde; Archives Vétérinaire; Archiv für Wissenschaftliche; Œsterreichische Vierteljahresschrift für Wissenschaftliche Veterinärkunde; Der Hufschmied; Chicago Live Stock Journal; Clinica Veterinaria; Edinburgh Medical Journal; Tidskrift für Veterinar-Medicin; Canadian Dairyman and Farmer; Animalia; Kansas Live Stock Indicator.*

NEWSPAPERS: *Debater; Irish Times; Dundee Advertiser.*